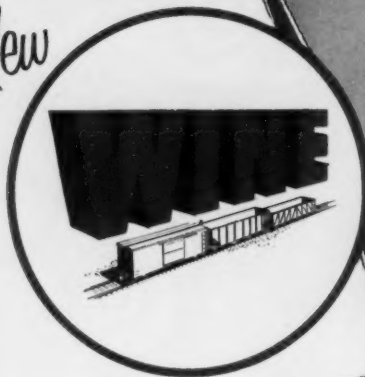


RAILWAY AGE

WORKBOOK OF THE RAILWAYS

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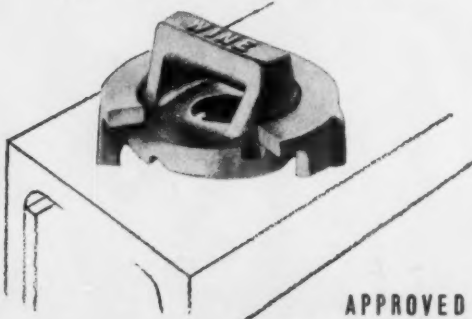


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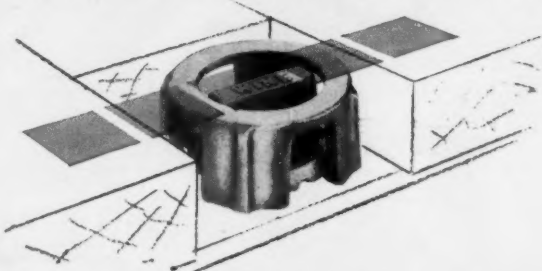
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Introduced at the Allied Conventions in 1955.



Set new Standards for Freight Train Braking in Drag, Emergency Breakaway and Road Tests.



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NEW YORK



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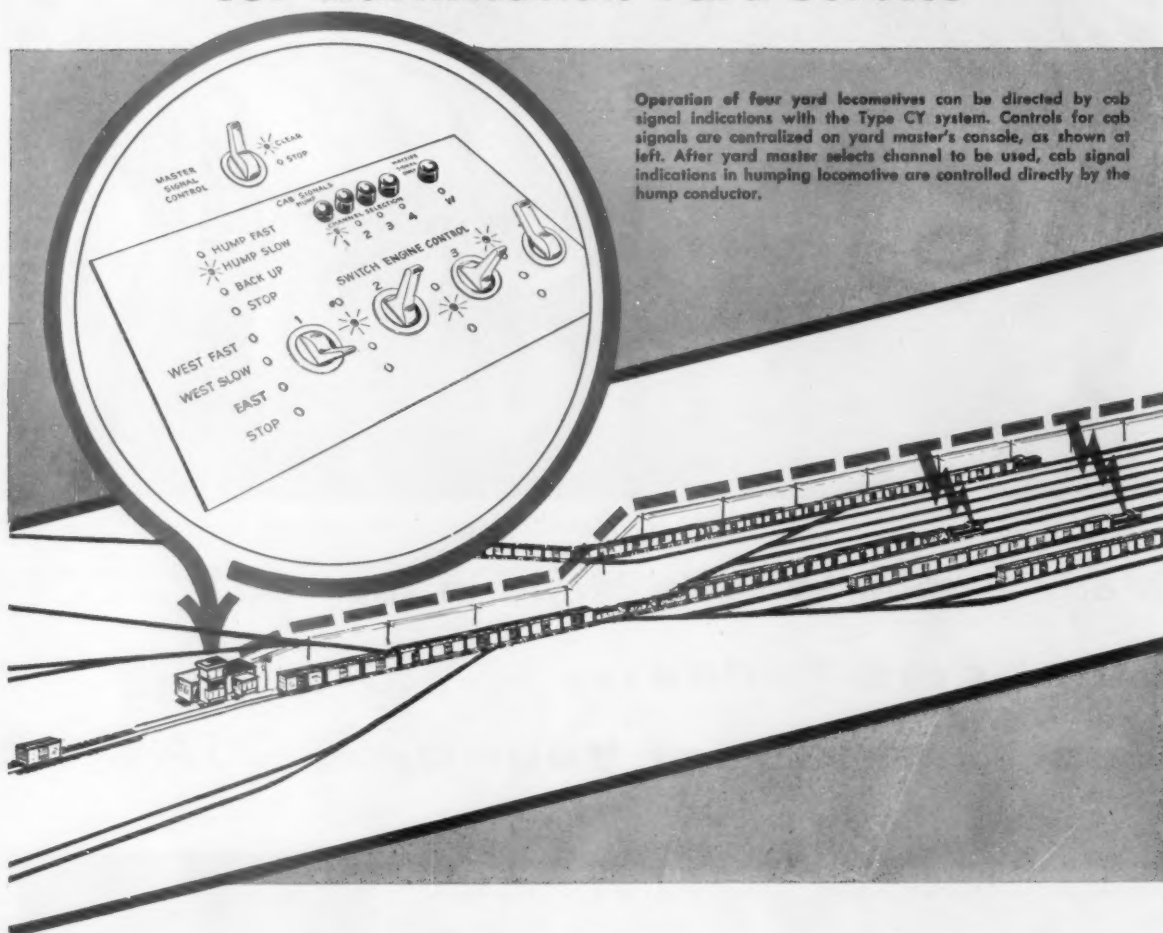
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UNION Type CY INDUCTIVE CAB SIGNAL SYSTEM for Classification Yard Service



Operation of four yard locomotives can be directed by cab signal indications with the Type CY system. Controls for cab signals are centralized on yard master's console, as shown at left. After yard master selects channel to be used, cab signal indications in humping locomotive are controlled directly by the hump conductor.

Now, continuous control of humping movements is possible with the new UNION Type CY Inductive Cab Signal System designed especially for classification yard service. This new system puts a visual signal in the cab where it can always be seen and provides an audible annunciation of signal changes. This visual-audible signal combination in the cab keeps enginemen constantly alerted to humping instructions.

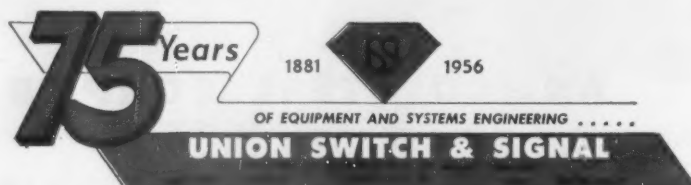
Using thoroughly proved induc-

tive principles, this new UNION System can transmit any of four signal indications . . . hump-fast, hump-slow, back-up, or stop . . . to each humping locomotive. Each change in signal is announced in the cab by the ringing of a single-stroke bell. Up to four locomotives can be controlled simultaneously yet inde-

pendently over a single carrier frequency.

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Workbook of the Railways

Vol. 141, No. 11
September 10, 1956

CONTENTS and Week at a Glance

July net was \$43 million . . .

. . . compared with the \$71 million reported for July 1955, the AAR's Bureau of Railway Economics estimates. Estimated net income for the first seven months of 1956 was \$443 million, down \$45 million from that reported for the like 1955 period. Rate of return for the 12 months ended with July averaged 4.01%. . . . p.7

Loss of public confidence . . .

. . . in the railway industry as well as general confusion and injury to the morale of employees have resulted from recent pessimistic statements by railroad leaders about the future of the passenger business, says John M. Budd, Great Northern president. . . . p.7

FORUM: Research and careful analysis by . . .

. . . able lawyers, though less appreciated, is just as necessary and just as productive for the railroad industry as research in engineering, or accounting, or operating methods. One vitally important function of lawyers is to find effective ways to enable sound business and economic principles to get into actual practice. . . . p.21

An improved type of interlocking machine . . .

. . . is used by the Burlington to handle 122 trains daily on 35 miles of three-track line. Manipulation is simple, fast and accurate. . . . p.22

What's new in M/W equipment . . .

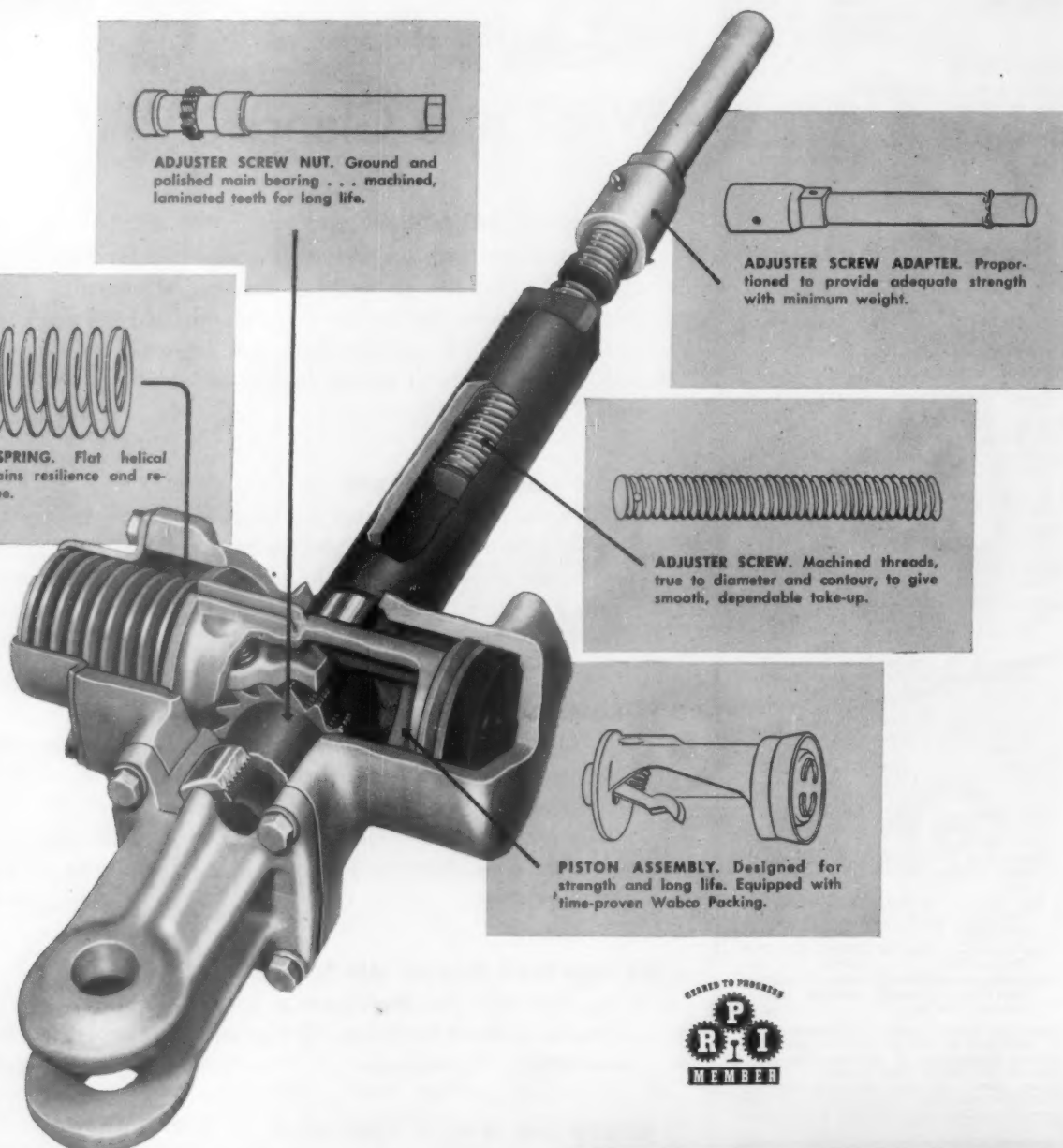
. . . will be shown at the exhibit that is an integral part of the forthcoming annual meetings of the Roadmasters' and Bridge Building Associations in Chicago. No sessions are scheduled for September 19, to give members ample opportunity to visit the exhibit. . . . p.24

Contributions to railway research . . .

. . . Article No. 2 in this Railway Age series, designed to show the extent to which research in the interest of railroads

Here are the Reasons the Type "D"

DOES THE JOB - STAYS ON THE JOB



Each of the simple, rugged operating parts in the Westinghouse Type "D" Slack Adjuster is designed to stand up under long, punishing service. The Type "D" has the same fine engineering you find in Westinghouse Air Brakes . . . the same basic design principle that has been proved in many years of passenger service.

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AIR BRAKE DIVISION



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Westinghouse

Type D

Pneumatic-Automatic

SLACK ADJUSTER

for Freight Cars

RAILWAY AGE

Current Statistics

Operating revenues, seven months	
1956	\$6,046,938,511
1955	5,684,950,384
Operating expenses, seven months	
1956	\$4,694,896,497
1955	4,298,655,712
Taxes seven months	
1956	\$629,099,537
1955	613,575,909
Net railway operating income, seven months	
1956	\$572,038,261
1955	623,003,094
Net income, estimated, seven months	
1956	\$443,000,000
1955	488,000,000
Average price 20 railroad stocks	
September 4, 1956	98.31
September 6, 1955	96.27
Carloadings revenue freight	
Thirty-four weeks, 1956	24,239,555
Thirty-four weeks, 1955	23,989,169
Average daily freight car surplus	
Wk. ended Aug. 25, 1956 ..	6,597
Wk. ended Aug. 27, 1955 ..	5,482
Average daily freight car shortage	
Wk. ended Aug. 25, 1956 ..	8,432
Wk. ended Aug. 27, 1955 ..	12,713
Freight cars on order	
August 1, 1956	126,194
August 1, 1955	42,888
Freight cars delivered	
Seven months, 1956	38,533
Seven months, 1955	19,303
Average number railroad employees	
Mid-July 1956	1,032,859
Mid-July 1955	1,091,380

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

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Workbook of the Railways

Week at a Glance CONTINUED

is carried on by manufacturers in the railway supply field, tells the story of American Brake Shoe. . . . p.30

BRIEFS

Two four-wheel flat cars . . .

. . . built by Pullman-Standard, are being tested on the Pennsylvania. The experimental cars are designed primarily for piggyback service, especially where minimum height-over-rail clearances exist. If the tests are successful, Pullman-Standard may add the cars to its line of standardized freight cars.

Less than a month to win \$2,500 . . .

. . . in prizes in the Joseph T. Small essay contest on the modern freight car—the fleet and the design. To be considered for the two first prizes of \$1,000 each and the two second prizes of \$250 each, entries must be in the hands of the Executive Editor of Railway Age by September 30. Details were reported in the issue of July 9, p. 41.

Attractive young ladies are . . .

. . . to replace traditional male secretaries on New York Central's "Twentieth Century Limited" beginning September 16. Duties of the five "Girls of the Century," who will wear specially designed uniforms and hats, will include such things as registration of passengers, secretarial work and sending telegrams. The girls also will appear before meetings of clubs and other organizations to encourage train travel.

Rise in unemployment tax rate . . .

. . . is regarded as a likely possibility for next year. Balance in Railroad Retirement Board's unemployment insurance account on September 30 determines what tax rate will be for following year. The balance has dropped below \$350 million, and if it remains below that amount on September 30 the tax rate will increase from 1½% to 2% of taxable payroll on January 1.

Our understatement of the week . . .

. . . There appears to be somewhat less than complete unanimity regarding how large a freight-rate increase, if any, railroads should be seeking—and also what the "hold-downs" should be.

MORE ECONOMIES AHEAD

with Standard Solid Bearing Assemblies

Why and how elimination of "loose" waste and adoption of "controlled clearance" bearings will still further increase economic advantages of low cost Solid Bearings

YOU SAVE real money now with standard solid bearing assemblies. And soon you'll be saving even more—for two big reasons.

First, there's the program now in force to equip freight cars with "controlled clearance" bearings—standard bearings with finished bore diameters much closer to journal diameters on which they operate. You get a big extra margin of safety during initial run-in periods, and the time for run-in is greatly reduced. Right at the start the bearing load is distributed over a wide area. That's going to greatly increase bearing life.

Second, there's the program now under way to eliminate "loose" waste—either by using approved pad or mechanical lubricators, or by using an approved device to contain the lubricator—such as the R-S Journal Stop that performs the dual function of eliminating excessive axle displacement at the same time

that it anchors the lubricator (whether waste or not) firmly in position.

As soon as "loose" waste is eliminated, you'll see a big drop in routine servicing costs and another big jump in bearing performance. Three year periods between detailed bearing inspection are in prospect, too—you'll halve those costs for periodic attention.

There's no question about it. Solid bearings save you money now, and they'll save you more in the future. Then, too, you'll still have all the inherent advantages which solid bearings bring to railroad rolling stock. You can take the maximum load, make the fastest schedule. You save in unsprung dead weight, and you get the smoothest ride on any freight car truck. Best of all, you'll get top bearing performance at the lowest possible cost. Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 6, Illinois.

MAGNUS
Solid Bearings

MAGNUS METAL CORPORATION

Subsidiary of **NATIONAL LEAD COMPANY**



July Net Was Down \$28 Million

It was \$43 million compared with July 1955's \$71 million—seven months' net, at \$443 million, was off \$45 million

Class I railroads in July had estimated net income, after interest and rentals, of \$43 million, according to the Bureau of Railway Economics of the AAR.

This was a decrease of \$28 million below the \$71 million reported for July 1955. The estimated net income for this year's first seven months was

\$443 million, down \$45 million from the \$488 million reported for the comparable 1955 period.

July's net railway operating income, before interest and rentals, was \$61,432,982, down more than \$31 million from the July 1955 figure of \$92,546,200. The seven-months' net railway operating in-

come was \$572,038,261, compared with \$623,003,094.

Sixteen Class I roads failed to earn interest and rentals in this year's first seven months. The rate of return for the 12 months ended with July averaged 4.01%, compared with 4.06% for the 12 months ended with July 1955.

Lack of RR Unity Lessens Public Confidence

Industry's handling of "passenger problem" has led to "general confusion" as well as lowered morale of employees, John Budd tells Ticket Agents

Loss of public confidence in the railway industry, injury to employee morale, and general confusion have resulted from recent pessimistic statements by railroad leaders about the future of the passenger business, John M. Budd, president of the Great Northern, said last week.

Mr. Budd told the annual convention of the Association of American Railroad Ticket Agents at Glacier National Park, Mont., that he believes "American railways are going to be in the business of carrying passengers in coaches and sleeping cars, in addition to mail and express, for a long time.

"The services of individual lines will vary, of course, in relation to traffic requirements and potentials of their territories."

Lack of Unity—The necessity for a sharp, searching look at the passenger problem by railway leaders certainly is not questioned, Mr. Budd added, "but, I feel that what has been said and done about it in the immediate past implies an unfortunate lack of a sense of union and of common interests and responsibilities, for the American railway business is not a regional enterprise,

and never can be successfully treated as such."

"Management cannot reasonably ask or expect effective team play in the ranks unless it willingly shows and leads the way," he declared. "I share a feeling that recent statements and actions concerning the future of rail passenger business have resulted in general confusion, some loss of public confidence in our industry, and regrettable harm to the morale—esprit de corps—of the men and women devoted to selling railway travel."

Some changes in public policy must be made to assure the future health of the railway industry as a whole, Mr. Budd continued, "but, to get these changes we first must have the greatest possible measure of public confidence in the essentiality of railway transportation to the nation's progress." Confidence, like charity, he added, "begins—or should begin, at home."

"All of us, from top to bottom in railroading, must believe that the railway passenger business can have a happy future before we look to the public for support and patronage of it," Mr. Budd said.

Under the ICC formula the passenger service loss for last year was \$700 million. "This does not mean, however, that if all passenger service were discontinued the railways would be \$700 million better off," Mr. Budd declared.

"We would save comparatively few dollars if all passenger service was discontinued, and it presently is conceivable that regulatory authorities—national and state—would not permit removal of all rail passenger service," he said. Even though the railways' percentage of the total available market is relatively small, trains still are carrying a great many people, and service must be convenient for these people or they would not use it, he added.

Unprofitable Areas — "There are very definite areas where railways should get out of the passenger business, and we have been moving as rapidly as possible in that direction," he went on to say, "It makes no sense to me to operate a local train which is used only to a limited extent for handling mail and express." Railways are losing money on a great many main line local trains. "People will not ride such trains because the schedules are not fast enough, but a great deal of mail and express are handled on these operations," he said. "It seems to me that service of this type can

be provided more effectively and more economically by trucks operating on parallel highways."

In meeting competition for pas-

senger patronage, three main factors should be considered: price, product, and salesmanship. In the highly competitive passenger market, "sales are

very sensitive to prices," Mr. Budd said. "We have tried to set rates to produce the greatest net return from our service."

ICC Lets Railroads Meet Water Rate

Rejects contention that Interstate Commerce Act requires differential over cost of shipping via competitive truck-barge-rail route

Rejecting contentions that the Interstate Commerce Act "clearly contemplates that rail rates should be differentially higher than water rates," the Interstate Commerce Commission has refused to condemn tariffs which publish an all-rail rate equal to the cost of shipping over a competing truck-barge-rail route.

The commission's determination by Division 2 was in a case docketed as I&S No. 6446. The traffic at stake is iron and steel billets moving from Steelton, Ky., and Louisville to New Bedford, Mass.

The railroad rate in issue was \$18.06 per ton, 100,000 lb. minimum, exclusive of the Ex Parte 196 increases. It was calculated to yield \$806.25 per car and 52.6 to 71.5 cents per car mile. Evidence indicated that the shipper would pay no

more for all-rail service than for the truck-barge-rail service.

The protestant was Waterways Freight Bureau, which advanced the contention noted above. In rejecting it, the commission found the rail rate compensatory and also had this to say:

"There being no evidence to warrant a finding that the truck-barge-rail route has any inherent advantages that would entitle it to lower rates than the all-rail route, we feel obliged not to require a barge differential under the rail rates. . . . Carriers are at liberty to initiate such rates as they choose, and we may not interfere unless it appears that such rates violate some provision of the act, interpreted in the light of the national transportation policy.

"Where, as here, the proposed

rates are on a level that is reasonably related to the level of rates from competitive origins, the earnings produced thereby leave no doubt of their compensatory nature, and the evidence is definite that the rates would afford a fair and equal opportunity to both the respondents and the protestants to compete for the traffic without sacrificing any inherent advantages of either mode of transportation, we feel called upon not to interfere with the managerial discretion of the respondents."

Truck Rates Based on Rail Scale Approved

Ruling on three motor class rate proceedings, the ICC has approved use by truckers of the Docket 28300 rail scale to fix rates on shipments of 6,000 lb and over between Middle Atlantic and New England territories.

At the same time, the commission ruled that proposed arbitraries of 20 and 45 cents had not been shown just and reasonable and gave the Middle Atlantic Conference until October 8 to cancel them. However, the ICC found a scale of arbitraries—proposed by the conference in exceptions to an examiner's proposed report—reflecting the "value of the service," were acceptable.

Ruling on the use of the rail scales to establish class rates, the commission stated: "If, as suggested by shippers and other opposing parties, class rates for motor common carriers in this territory were to be constructed with full consideration for motor-carrier operating costs, it is doubtful that such rates could long be maintained in the face of the compelling competition between rail and motor carriers. Such a prescription would necessarily be of reasonable maximum rates and it would be difficult to restrain either mode of transport from meeting the class rates of the other, where lower."

The commission noted that "class-
(Continued on page 10)



Twin Cities Roads Give Shippers "Red Carpet" Tour

Most of the 300 railroad and industrial traffic men who recently toured the St. Paul-Minneapolis terminal area as guests of the 12 roads serving the terminal, rode in four of these specially outfitted 65-ft gondola cars.

Coaches were provided for those preferring an "indoor" ride. The tour was sponsored jointly by the Minneapolis and St. Paul Traffic Clubs and the railroads to acquaint traffic managers with area's terminal facilities.

RAILWAY MARKET OUTLOOK THIS WEEK

a RAILWAY AGE Workbook Page

Freight Car Loadings

Loadings of revenue freight for the week ended September 1 were not available, because of the September 3 Labor Day holiday, as this issue of Railway Age went to press.

Loadings of revenue freight for the week ended August 25 totaled 770,413 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS For the week ended Saturday, August 25			
District	1956	1955	1954
Eastern	119,932	120,047	108,916
Allegheny	150,076	152,015	121,648
Poconchos	63,711	62,226	46,535
Southern	125,388	125,988	114,769
Northwestern ..	124,970	139,048	113,594
Central Western ..	128,047	129,423	115,210
Southwestern ..	58,289	58,525	56,006
Total Western Districts	311,306	326,996	284,810
Total All Roads	770,413	787,272	676,698
Commodities:			
Grain and grain products	54,250	51,353	32,103
Livestock	10,163	7,786	8,621
Coal	139,172	132,525	109,663
Coke	11,226	12,330	6,962
Forest Products ..	49,426	48,290	38,350
Ore	73,125	90,388	58,579
Merchandise I.&I. ..	61,608	63,311	63,446
Miscellaneous ..	371,443	381,289	338,974
August 25	770,413	787,272	676,698
August 18	769,624	775,701	676,624
August 11	715,236	770,251	685,272
August 4	660,287	760,387	667,592
July 28	649,806	790,426	683,617

Cumulative total,
34 weeks ...24,239,533 23,989,169 21,842,017

In Canada.—Carloadings for the seven-day period ended August 21 totaled 93,866 cars, compared with 92,255 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
August 21, 1956	93,866	31,685
August 21, 1955	85,357	30,788
Cumulative Totals:		
August 21, 1956	2,782,944	1,119,178
August 21, 1955	2,501,416	1,034,018

New Equipment

FREIGHT-TRAIN CARS

► **Lehigh & New England.**—Ordered 400 70-ton covered hopper cars for delivery next April and May; Greenville Steel Car will build 200, and Pullman-Standard and ACF Industries will build 100 each.

New Facilities

► **Chesapeake & Ohio.**—Electro-Motive Division of General Motors has ordered from Union Switch & Signal Division of Westinghouse Air Brake 50 sets of intermittent inductive train stop equipment to be installed on locomotives for the C&O.

► **Chicago & North Western.**—Announced construction projects totaling \$299,018 including: installation of crossing protection at five points, total cost \$161,977; signal protection between Lewiston, Minn., and Stockton, \$55,400; and remote control interlocker at Northline, Wis., \$81,641.

► **Chicago Transit Authority.**—Will make test installation of moving belt-type ramp on the North-South rapid transit route at 63rd and Loomis terminal; ramp will have capacity of 7,200 persons an hour and move at speed of 125 ft per minute on 15 degree angle rising 23 ft from ground to platform; Stephens-Adamson Manufacturing Company, Aurora, submitted low bid of \$19,611 for the installation.

► **Detroit, Toledo & Ironton.**—Expanding its Harbaugh rail-track transfer dock, estimated cost \$55,000; completion scheduled for December 1.

► **Norfolk & Western.**—Ordered equipment from Union Switch & Signal Division of Westinghouse Air Brake to convert to traffic control about 132 miles of automatic signaling on Clinch Valley and Dry Fork districts.

► **Pennsylvania.**—Ordered from Union Switch & Signal Division of Westinghouse Air Brake 79 sets of continuous cab signal equipment for installation on diesel-electric locomotives.

► **Sand Springs.**—Constructing new trackage at Sheffield Steel Corporation plant, estimated cost \$80,000.

► **Western Pacific.**—Reports the following construction projects: reline two tunnels at Keddie, Cal., with concrete for \$375,000; replace 2.5 mi of 100 lb rail with 119 lb between Proctor, Nev. and Highland for \$120,640; replace 12.2 mi of 100 lb rail with 119 lb between Knowls, Utah and Low for \$538,125.

(Continued from page 8)

rated traffic, on the whole, produces about 60% of the respondents' revenue, and approximately 65% of their total traffic moves in less than truckloads."

As to the arbitraries, the commission stated that assessing charges to

compensate carriers for additional costs incurred in handling small shipments is "extremely troublesome," with much of the added cost coming in clerical services "which do not vary measurably with distance or the size of shipments." The approved scale of arbitraries, the ICC said,

"has the advantage of spreading the cost burden according to the value of the service."

The commission, in the same report, also approved use of rail distances instead of highway distances to fix motor carrier rates, largely because of their relative stability.

States Insist on Passenger Service

NARUC representatives tells ICC that service must be maintained even if it requires subsidization

The National Association of Railroad & Utilities Commissioners has advised the Interstate Commerce Commission that the railroad industry's passenger-deficit problem must be solved in a way which provides for continuance of passenger service. Even if subsidy be involved in such a solution, the state commissioners were called willing to accept it.

This was pointed up in a statement made last week by the chairman of the NARUC committee which has been studying the passenger-service deficit for several years—E. S. Loughlin, who is also chairman of Connecticut's Public Utilities Commission. Mr. Loughlin made his statement in Washington September 5 at the pre-hearing conference with which the ICC's investigation of the deficit got under way.

The conference, before Examiner

George B. Vandiver, was for the purpose of considering information which should be developed in the case (*Railway Age*, August 6, page 11). Members of the commission's Division 3, which has charge of the inquiry, attended the conference.

The NARUC approach to the inquiry, as decided upon at its recent convention, was endorsed generally by W. M. Moloney, general attorney of the Association of American Railroads and chief railroad counsel in the case. Mr. Moloney quoted with approval an NARUC statement saying that the objective of the inquiry should be development of "a true understanding . . . of the nature and amount of the passenger-service deficit, the principal causes therefore, and the problems inherent in any appreciable reduction or elimination of such deficit."

Chairman Laughlin of the NARUC committee said the inquiry should determine if there is a place for "some kind of subsidy" for the passenger service, if it should be determined that the service cannot be put on a profitable basis. "The problem," he said, "has to be brought to the attention of the public, the governors, and the state legislatures. They have got to be informed that, if there is a service which nobody uses, someone has to pay for it."

Commutation service should be studied separately, Mr. Loughlin suggested. He also suggested that such a study might show that communities where people work has some responsibility for maintaining service to and from communities where the workers live.

The Connecticut commissioner recognized that some railroad men would oppose subsidies. As to them, he said: "I don't think it is within their discretion to make the decision."

General Attorney Moloney of the AAR said the railroads hope to make their presentations along lines proposed in the NARUC statement quoted above. He went on to warn that the investigation should not be permitted to become "a stone upon which to grind particular axes."

Appearances in the case were entered by counsel for various labor organizations, including the Railway Labor Executives Association. Also represented were various individual state commissions, the cities of New York and Philadelphia, and departments of the federal government. The latter included the Post Office Department, which provides much of the "head-end" traffic handled on passenger trains.

Freight shippers were also on hand, appearances being entered by such organizations as the National



Translucent Fiberglass Protects CA&E Commuters

A 300-ft wall of Lite Green Alsynite translucent Fiberglass backs this block-long platform at the Forest Park station of the Chicago, Aurora & Elgin. The corrugated panels safeguard pas-

sengers transferring from the Chicago Transit Authority's rapid transit trains to CA&E trains against inclement winter weather and also block summer heat.

Coal Association, Property Owners Committee, National Council of Farm Cooperatives, Growers and Shippers League of Florida, National

Livestock Producers Association, National Wool Growers Association. No appearance was entered for the National Industrial Traffic League.

RR-Union Wage Parleys Begin

Industry-wide negotiations between railroads and the Brotherhood of Locomotive Firemen & Enginemen and the Brotherhood of Railroad Trainmen began in Chicago last week.

The BLF&E is demanding a \$3 a day pay increase and a company-financed hospital, surgical and medical benefit plan; the BRT is demanding a \$3 a day increase in the basic pay plus a \$2.50 a day increase for short turn around service (Railway Age, Aug. 6, p. 7).

In another development last week, the Brotherhood of Locomotive Engineers served notice it will seek a 15% pay increase this year. Railroads have countered this demand by proposing that the basic day's pay in freight service should be based on 160 miles per day and in passenger service on 180 miles per day. Currently, a basic day's pay in

both road freight and passenger service is 100 miles. The roads have also proposed a reduction of 24 cents a day in the basic rate for yard service engineers to correct "erroneous conclusions and recommendations made by a Presidential Emergency Board in 1955." The roads further proposed that certain other arbitraries and special allowances be eliminated.

Meanwhile, the Order of Railroad Conductors has advised the carriers that, in addition to the 25% wage increase demand filed with the carriers July 2, the union desires the following rule changes:

A six-hour day for road freight and passenger service; an eight-hour day for short-turn runs; a 10% night pay differential; four weeks paid vacation for men with over 15 years of service; and seven paid holidays.

Equipment used will consist of the Kershaw spot tamper, two-wheel Kribber, track undercutter and skel-tonizer, track crane, ballast cleaner, Jack-All, ballast regulator and plow, track broom, tie-bed scarifier and cleaner, and tie remover. Other machines made by the company will also be on display.

Reefers May Substitute For Box Cars in West

The ICC has issued Service Order No. 915 to permit railroads to substitute up to three SFRD, PFE or WP refrigerator cars (not suitable for transporting perishables) in lieu of each box car ordered for shipments within the area embraced by the states of Oregon, California, Arizona and Nevada.

The new order became effective on August 27 and is scheduled to expire December 31. An identical order, No. 908, was issued by the commission in September 1955 and expired at the end of last year.

Santa Fe Trains Collide Head-on

Twenty Santa Fe employees, including 15 dining car personnel, were killed in last week's head-on

Demurrage Boost Suspension Assailed

The railroads are seeking review of the ICC's recent order suspending demurrage rate increases which were to have been effective September 1.

William M. Moloney, attorney for the carriers, described the commission's action as having the effect of offsetting railroad attempts to improve the national car supply.

He said the order is a "setback" to railroads, particularly as it comes "on the eve of the peak season of traffic and in the face of continued increases in car shortages and car detention." (Railway Age, Sept. 4, p. 8).

He said railroads "welcome" the plan of the commission to investigate the situation which occasioned the application for higher demurrage rates but added that "the urgency of the situation requires prompt measures without awaiting the outcome of the investigation."

The proposed increases would raise demurrage rates to \$4 for each of the first two days after the free-time allowance, \$7 for each of the

next two chargeable days and \$10 a day thereafter.

"Kershawrama" Show Starts on Erie October 1

A track-maintenance demonstration featuring a complete line of track-reconditioning equipment will be staged near Chicago, beginning October 1, by the Kershaw Manufacturing Company, Montgomery, Ala., in cooperation with the Erie.

The demonstration will take place on the tracks of the railroad at Boone Grove, Ind., between mileposts 219 and 222. All railroad men in the country are invited to attend.

The "Kershawrama," as the demonstration is called, will feature the use of 10 different pieces of equipment in a complete track-rehabilitation project. The track will be stripped and undercut, ties replaced, ballast cleaned and returned to the track, and the track will be surfaced, tamped, lined and dressed.



Piggyback for Pens

First shipment on Illinois Central's expanded trailer-on-flat-car service, linking New Orleans with Memphis and Chicago, was an order of ball point pens. Here F. V. Lawson, Chicago freight agent for IC, receives carton from L. A. Bressler, Paper Mate Company traffic manager. IC t-o-f-c provides second morning deliveries between Chicago and New Orleans.

collision between westbound No. 19, "The Chief," and eastbound No. 8, a mail train. No passengers were killed.

The collision, which occurred at 3:10 a.m. September 5, near Springer, N. M., apparently resulted from an improperly alined switch, which caused "The Chief" to veer into a siding and strike No. 8, which was standing still. Most of the fatalities were employees who were sleeping in

a dormitory car at the head-end of "The Chief."

The Interstate Commerce Commission announced it had ordered three inspectors to the scene of the collision to investigate the accident. The inspectors, all from the commission's Denver regional office, are: Burns F. Schaller and Antone Rook of the Section of Railroad Safety, and H. B. Harms of the Section of Locomotive Inspection.

1st-Qtr. Loading Estimates 1.9% Low

Estimates of car loadings by the Regional Shippers Advisory Boards for the first quarter were 1.9% under actual loadings, it was announced by the AAR's Car Service Division.

While the estimates were off by as much as 54.6% (over) and 12.4% (under) these differences from the actual figures were in commodities—hay, straw and alfalfa, and lime and plaster, respectively—making up a relatively small portion of total carloadings.

On the largest single commodity classification—coal and coke—the

estimates were 58,811 cars short of the total 2,089,116 cars loaded, a 2.9% underestimate.

"Worst" estimate among commodities involving more than 300,000 carloadings was in iron and steel—12.1% below the 541,540 cars actually loaded. A forecast 0.3% short of the actual 348,086 cars loaded was made in the petroleum and petroleum products category.

There were five regional underestimates and eight overestimates. The former ranged from 3.1% in the Trans-Mo-Kansas area, to 7.6%

in the Atlantic States; the latter ranged from 0.02% in the Southwest, to 6.8% in the Great Lakes.

Abandonments

Authorizations

BALTIMORE & EASTERN.—To abandon a 12.6 mile segment between Queenstown, Md., and Love Point.

CENTRAL VERMONT.—To abandon a 14.3 mile line from North Switch (St. Albans), Vt., to the Canadian border at Highgate Springs, the extension into Canada having been abandoned in 1955.

CHICAGO & ILLINOIS MIDLAND.—To abandon an 8.2 mile segment from its junction with the Illinois Central at Cicero, Ill., to its junction with the Chicago & North Western at Compro.

CHICAGO & NORTH WESTERN.—To abandon a 19.9 mile branch between Eland, Wis., and Rosholt; and to abandon a 15.8 mile segment from Bryant, Wis., to White Lake.

CHICAGO, BURLINGTON & QUINCY.—To abandon a 6.4 mile branch between Stockport, Iowa, and Birmingham; and to abandon, with the Chicago & North Western, 1 mile of track at Virden, Ill.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—To abandon an 11.8 mile segment from Gratiot, Wis., to the end of the line at Skullsburg.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—To abandon a 20.3 mile segment of its Wayne-Bloomfield branch extending from Wayne, Neb., to Randolph in conjunction with its acquisition of trackage rights over the Burlington from Laurel to Randolph.

DELAWARE & HUDSON.—To abandon a 21 mile branch from Cherry Valley Junction, N.Y., to Cherry Valley.

ERIE.—To abandon an 18 mile segment between Wayland, N.Y., and Livonia.

ILLINOIS CENTRAL.—To abandon a 29 mile segment from Manda, Ill., to Reevesville.

ILLINOIS TERMINAL.—To abandon its 15 mile line between Lang and Granite, Ill.

MISSOURI PACIFIC.—To abandon a segment extending 9.6 miles from a connection with the Houston & Brazos Valley at Anchor, Tex., to East Columbia, together with 1 mile of yard track and sidings.

NEW YORK, CHICAGO & ST. LOUIS.—To abandon with the Chesapeake & Ohio their respective portions of an 0.2 mile section of interchange track at Thomaston, Ind.

NEW YORK, NEW HAVEN & HARTFORD.—To abandon 6.1-mile branch line extending from Collinsville, Conn., to New Hartford.

OREGON SHORT LINE.—To abandon its 4.5 mile Thomas branch from Thomas Junction, Idaho, to Thomas, simultaneous with abandonment of operation of the branch by Union Pacific.

PARIS & MT. PLEASANT.—To abandon its entire line from Paris, Tex., to Mt. Pleasant, 31 miles, together with all siding and switch tracks in Lamar, Red River, Franklin and Titus Counties, Tex.

PENNSYLVANIA.—To abandon an 0.7 mile segment of the Philadelphia, Baltimore & Washington from the Maryland-Virginia border to Chincoteague Bay at Franklin City, this being the southernmost portion of a line extending northward to Harrington, Del.

SACRAMENTO NORTHERN.—To abandon, in conjunction with the Oakland Terminal, 13.6 miles of track running through Oakland, Cal., to West Lafayette, the abandonment occasioned by the City of Oakland's refusal to renew the road's franchise to operate in the city streets. A new line to be constructed, with ICC authorization, by the Western Pacific to connect with an extension of the Oakland Terminal in Oakland, will replace the line to be abandoned.

SARATOGA & SCHUYLERVILLE.—To abandon its entire line, 25.1 miles, all located in Saratoga County, N. Y.

TAMPA SOUTHERN.—To abandon an 0.6 mile segment from Delapur, Fla., to the end of the

(Continued on page 14)



Automatic Loader for Trailer Ferry

Retractable trailer wheels are gripped in "dolly rabbit" device to be installed on trailership being built for TMT Trailer Ferry, Inc. Eric Rath (left) president of company, explains opera-

tion of device to Brig. Gen. E.C.R. Lasher, assistant chief, U.S. Army Transportation Corps. "Rabbit" is affixed to endless cable which is used to draw trailer vans aboard ship.

this is the backbone of the
very finest freight car
in the world



We don't know what "brand" of
freight car this is—nor do we care—
because WE ARE NOT CAR BUILDERS

... but we do know
that a man who knows enough about underframes to specify
this one could not build anything less than the very finest
freight car in the world!

INTERNATIONAL STEEL COMPANY
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Precision fabricators of correctively designed components:
UNDERFRAMES . . . SIDE ASSEMBLIES . . . DOORS . . . BULKHEADS . . . FLOORS . . . HOPPERS

(Continued from page 12)

line, simultaneous with abandonment of operation of the segment by the Atlantic Coast Line.

WARWICK.—To abandon a half-mile segment in Warwick, R.I.

WELLSVILLE, ADDISON & GALETON.—To abandon a 6 mile segment from Galeton, Pa., to Burrows.

WESTERN MARYLAND.—To abandon a 1.5 mile segment of its Elk Garden branch from Harrison, W. Va., to Oakmont, together with a half-mile of side track.

Supply Trade

The Budd Company has licensed the Canadian Car & Foundry Co. to build and sell Budd's all-stainless steel railroad passenger cars, disc brakes and the Budd Rolokron, to Canadian railroads. CC&F, a subsidiary of A. V. Roe Canada, Ltd., is a member of the Hawker-Siddeley Group of England. Foreign railroad equipment manufacturers licensed by Budd to build its stainless steel cars now total nine.

Charles F. Palmer, president of Peerless Equipment Company, has been elected chairman of the board and chief executive officer. Norman T. Olsen, vice-president, has been elected president, and Lee P. Thomas, sales representative, has become vice-president.

Joseph S. Crane, vice-president and secretary of the Simmons-Boardman Publishing Corporation (publishers of Railway Age), has resigned—to set up his own business as a publisher's sales representative in the Southeast, with office at Atlanta, Ga. He is retaining active connection with Simmons-Boardman, and will be sales representative for this company's transportation papers in the Southeast.

LeTourneau-Westinghouse Company has announced a \$9 million plant expansion program, which, when completed, will provide more than double the productive capacity of the company since its organization in 1953. The program includes the building of an additional modern factory at Peoria, adjoining the present site of one of the Peoria plants, and expansion of plant operations at Toccoa, Ga., and Indianapolis, Ind.

Franklin Balmar Corporation, a wholly-owned subsidiary of Franklin Railway Supply Company, has been merged into the parent company. The surviving organization has adopted the name Franklin Balmar Corporation.

True Temper Corporation has assigned R. Simpson as regional sales manager for New England territory, at Hingham, Mass., and Edward W. Stack to the sales staff of the Cleveland office. C. C. Connolly, eastern division sales manager, has

been named southeastern division sales manager, covering all roads south of Philadelphia.

Electric Service Manufacturing Company, Philadelphia, has been acquired by H. K. Porter Company. R. Kreinberg, president of Electric Service, and others of the management staff, will continue with the new Porter unit.

Abraham Fischer has been named sales and merchandising manager, technical products service department, RCA Service Company. He was previously sales manager, mobile equipment, consumer products service department.

Robert W. Hopewell has been appointed manager of field service for Gould-National Batteries, Inc., at Trenton, N. J.

Frank Boufford has been appointed western regional sales manager of Yale & Towne Manufacturing Co. Richard C. Slater has been named assistant gas truck sales manager, succeeding Robert L. Brown, promoted to sales manager of electric trucks.

OBITUARY

A. S. Benjamin, 62, former executive of the Teletype Corporation, died in Chicago, July 19. He was an active committee member of the Communications Section, AAR.

Financial

Dividends Declared

CHESAPEAKE & OHIO.—87½¢, quarterly, payable September 20 to holders of record September 4.

CHICAGO SOUTH SHORE & SOUTH BEND.—15¢, quarterly, payable September 15 to holders of record September 5.

COLORADO & SOUTHERN.—4¢ non-cumulative 1st preferred, \$2, payable September 20 to holders of record September 4.

DAYTON & MICHIGAN.—common, 87½¢, semiannual; 8% preferred, \$1, quarterly; both payable October 1 to holders of record September 14.

DELAWARE & HUDSON.—40¢, quarterly, payable September 28 to holders of record September 10.

DENVER & RIO GRANDE WESTERN.—62½¢, quarterly, payable September 17 to holders of record September 7.

ERIE.—37½¢, quarterly, payable September 28 to holders of record September 7.

ILLINOIS CENTRAL.—87½¢, quarterly, payable October 1 to holders of record September 5.

READING.—4% 2nd preferred, 50¢, quarterly, payable October 11 to holders of record September 20.

UNION PACIFIC.—new common, 30¢, initial quarter; new 4% preferred, 20¢, initial semi-annual; both payable October 1 to holders of record September 10.

KANSAS CITY SOUTHERN.—common, 75¢, quarterly; extra, 25¢, both payable September 13 to holders of record August 31; 4% non-cumulative preferred, 50¢, quarterly, payable October 15 to holders of record September 28.

LAKE SUPERIOR & ISHPEMING.—35¢, quarterly, payable October 15 to holders of record October 1.

MINNEAPOLIS & ST. LOUIS.—35¢, quarterly, payable September 10 to holders of record August 31.

NORFOLK SOUTHERN.—3% stock dividend, payable November 1 to holders of record October 15.

PITTSBURGH, FT. WAYNE & CHICAGO.—common, \$1.75, quarterly, payable October 1 to holders of record September 10; 7% preferred, \$1.75, quarterly, payable October 2 to holders of record September 10.

Authorizations

ALLEGHANY CORPORATION.—To issue \$17,000,000 of secured promissory notes to a group of 9 banks, proceeds to be used to pay existing indebtedness of \$14,400,000 and for general corporate purposes.

CHESAPEAKE & OHIO.—To assume liability for \$4,800,000 of equipment trust certificates to finance in part purchase of 62 diesel units costing an estimated \$12,148,446, this being the second part of a total proposed issue of \$9,600,000 (Railway Age, Mar. 19, p. 13). Dated February 20, the certificates will mature in 15 annual installments of \$320,000 each, beginning February 1957. Division 4 approved the sale at 3% interest for 99.14—the bid of Salomon Bros. & Hutzler—which will make the annual cost of the proceeds to the road approximately 3.16%. They were reissued to the public at prices yielding from 2.80 to 3.10%, according to maturities.

CHICAGO & NORTH WESTERN.—To assume liability for \$3,900,000 of equipment trust certificates to finance in part purchase of freight cars expected to cost about \$14,630,390, this being the second installment of an \$11,700,000 issue (Railway Age, Jan. 30, p. 16). Dated November 1, 1955, the certificates will mature in 15 annual installments of \$260,000 each, beginning November 1, 1956. Division 4 approved their sale at 3¼% interest for 99.619—the bid of Halsey, Stuart & Co.—making the annual cost of the proceeds to the road about 3.85%. The securities were reoffered to the public at prices yielding from 3 to 3.75%, according to maturity.

GREAT NORTHERN.—To assume liability for \$6,600,000 of equipment trust certificates to finance in part building 1,000 box cars at a cost of \$6,287,000 (Railway Age, Apr. 23, p. 36). Dated April 1, they will mature in 30 semi-annual installments of \$220,000 each, beginning October 1. Division 4 approved their sale at 3¼% interest for 99.337—the bid of Salomon Bros. & Hutzler—making the annual cost of the securities about 3.48%. They were reoffered at prices to yield 3% for all maturities.

MISSOURI PACIFIC.—To assume liability for \$2,550,000 of equipment trust certificates to finance purchase of box cars costing \$3,193,780 (Railway Age, Apr. 23, p. 36). Dated April 15, they will mature in 15 annual installments of \$170,000 each, beginning April 15, 1957. Division 4 approved their sale at 3¼% interest for 99.17—the bid of Salomon Bros. & Hutzler—which will make the annual cost of the securities about 3.54%. They were reoffered at prices to yield from 3.15 to 3.40%, according to maturities.

PENNSYLVANIA.—To assume liability for \$7,560,000 of equipment trust certificates, first installment of a proposed \$14,670,000 issue to finance in part purchase of freight cars costing an estimated \$19,588,965 (Railway Age, Apr. 23, p. 36). Dated April 1, they would mature in 30 semiannual installments of \$252,000 each, beginning October 1. Division 4 approved their sale at 3¼% for 99.317—the bid of Salomon Bros. & Hutzler—making their annual cost about 3.24%. They were reoffered at prices to yield from 2.80 to 3.25%, according to maturities.

SEABOARD AIR LINE.—To assume liability for \$6,555,000 of equipment trust certificates to finance in part purchase of diesel units and passenger and freight cars costing an estimated \$17,497,106, this being the second installment of a \$13,110,000 issue. Dated November 1, 1955, the certificates will mature in 15 annual installments of \$437,000 each, beginning November 1, 1956. Division 4 approved their sale at 2¾% interest for 98.702—the bid of Salomon Bros. & Hutzler—which will make the annual cost of the proceeds to the road about 3.10%. The securities were reoffered to the public at prices yielding from 2.70 to 3.05%, according to maturity.

WABASH.—To assume liability for \$8,310,000 of equipment trust certificates to finance in part purchase of freight cars and locomotives at an estimated cost of \$10,398,839 (Railway Age, Apr. 23, p. 36). Dated April 1, they will mature in 15 annual installments of \$554,000 each, beginning April 1, 1957. Division 4 approved their sale at 3% interest for 98.40—the bid of Salomon Bros. & Hutzler—making their annual cost about 3.27%. They were reoffered at prices to yield 2.90 to 3.20%, according to maturities.



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Questions and of current interest

It has been suggested that one reason for the perpetual shortage of Class A box cars is the inspector's reluctance to certify cars as such. The contention goes that if a shipment is damaged, due to defective equipment, after the car has been certified as top grade, the mechanical department is criticized for faulty inspection. Have you found this to be true on your railroad, and what has been your remedy . . .

?

[Two answers to this question appeared in this column, August 13. Here's another, followed by the comments of a reader, on the question and the answers in the August 13 issue.—G. C. R.]

CONDUCTED BY G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

Answers

to the Transportation Department

No uniform classification systems.

"I do not think there can be any doubt that this is one of the major factors which continue the shortages, and the answers as printed were very disappointing. They indicate a tendency to 'whistle in the dark' and refuse to admit true facts.

"Personal instruction by car foremen to car inspectors cannot measurably help the situation, for few, if any, railroads have uniform rules, rigidly followed, to measure a Class A box.

"Furthermore, a Class A box, strangely enough, is not always a Class A box. Any trainmaster can cite many incidents where Shipper X has gladly accepted cars that Shipper Y rejected, even though both load the same commodities. It is also true that as car supply tightens shippers relax their specifications and willingly load cars that in the past they would have rejected.

"Another interesting phenomenon is the influence of local labor conditions upon the selection of cars. My experience as an assistant trainmaster taught me to beware of any reductions of force in the car inspector's ranks, for during layoff periods the remaining car inspectors apparently take great delight in downgrading and shopping as many cars as possible.

It shouldn't be so.

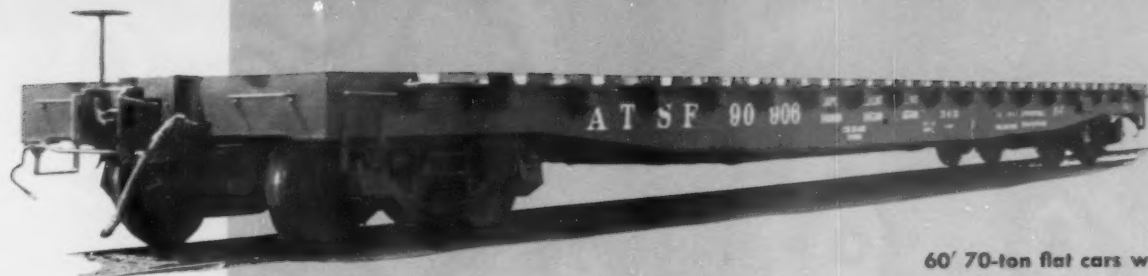
"In connection with the reference to car inspectors getting into trouble, frequently, when one of their Class A cars is subsequently rejected [our practice is as follows]. When cases of this nature are presented by our freight claim department, the matter is called to the attention of the responsible inspector as a matter of education for better classification in the future. It is not used in any way that may make him less inclined in the future to classify as Class A any suitable box cars.

"One sometimes doubts the desire of railroads to furnish proper cars to shippers. Or perhaps they feel that payments of damage claims will not result in as much loss of revenue as if no cars were furnished. If agents and yardmasters are instructed to furnish cars of lower classification, there follows a breakdown in responsibility. If their judgment is to be substituted for that of the inspector, a poor example is being set, and an invitation is being extended to the public for presentation of damage claims. Then, too, the big question arises as to what department is going to be held responsible. Compromises between requirements of operating and freight claim departments invariably result in an increase in the number of loss and damage claims.

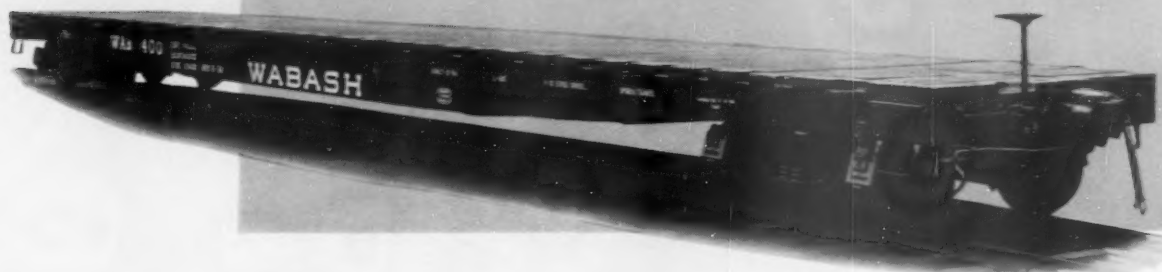
"The best remedy is for local people to develop an intimate knowledge of the shipper's requirements, and hand pick cars to meet them. By placing only cars which exactly meet a specific shipper's needs—cars which are of no higher grade than he wants, and certainly of no lower grade—he will distribute more judiciously the cars we have. This will satisfy our customers and at the same time stretch and conserve the car supply."—*Eastern Railroader*.

"I do not believe the per cent of Class A cars in any group should affect the car inspector's grading of cars that are fit for Class A. Further, I do not see why a car inspector should be reluctant to vouch for this aspect of his inspection duties any more than he would be to certify the mechanical fitness of a car.

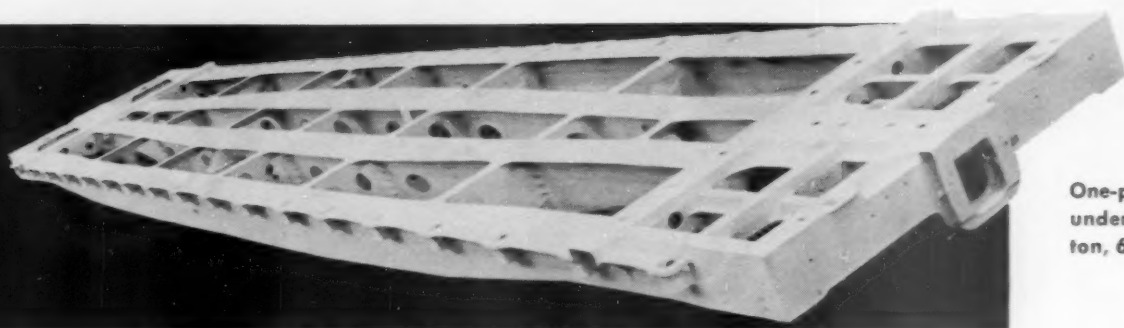
In either case, the inspector would be held accountable for error in judgment." — G. M. Leilich, vice-president—operations, Western Maryland.



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one-piece underframes.



the demand for 60' flat cars is increasing . . .



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underframe for 70-
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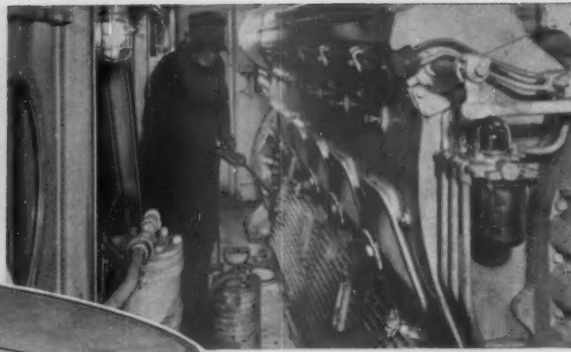
MONTGOMERY,



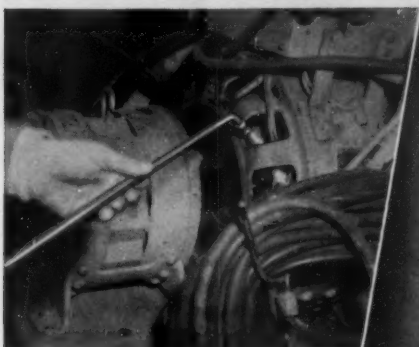
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Gentlemen: Please send me information on:

- ☐ Dearborn Cleaners and Detergents
- ☐ Dearborn Pressure Cleaning Systems
- ☐ Have a Dearborn Railroad Engineer call

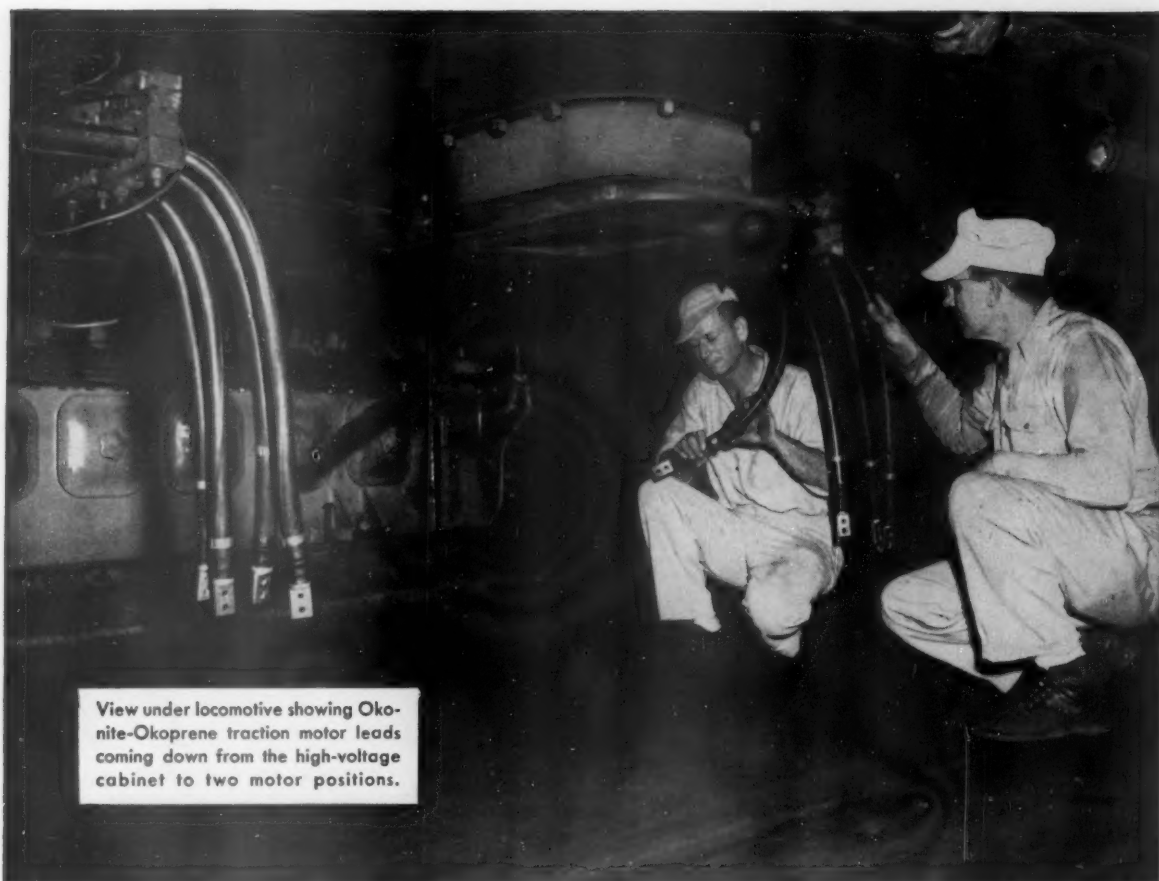
Name.....Title.....

Railroad.....

Address.....

City.....Zone.....State.....





View under locomotive showing Okonite-Okoprene traction motor leads coming down from the high-voltage cabinet to two motor positions.

SEABOARD rewires its diesels with OKONITE-OKOPRENE for 3 good reasons

When the Seaboard Air Line Railroad overhauled its Baldwin-Westinghouse diesel-electric locomotives, Okonite-Okoprene Type DEL cable was used throughout. The power, auxiliary and control cabinets were reworked and completely rewired in addition to the lighting and control circuits.

The three reasons why Seaboard engineers selected Okonite-Okoprene, Type DEL, were:

1. Tough, dense, heat-resistant insulation. Okonite insulation, a mineral base compound, has been specified by railroads for over 75 years because of its high insulation resistance, electrical stability and outstanding physical characteristics.

2. Moisture, flame, grease and oil-resistant sheath. Okoprene, a neoprene base compound, was introduced by Okonite to the trade in 1937. It has proved its mechanical

ruggedness through use as the protective covering on portable cables used in such demanding applications as mining and quarrying operations.

3. Proved service record. These mold-cured cables, made by Okonite's exclusive strip-insulation process, were the first rubber-insulated, neoprene-sheathed diesel-electric locomotive cables. The fact that this type cable has now become the standard for wiring railroad diesels is proof of its reliability and durability.

Physical dimensions and electrical characteristics are given for Type DEL cable in Bulletin RA-1078—"Okonite Cables for Railroad Use." This manual also contains information on other types of cables for railroad use and is available upon request to The Okonite Company, Passaic, N. J.

3391



OKONITE  **insulated cables**

Plenty of Important Work for Lawyers

Practically all railroad people are aware of the advantage to the industry of intensive research effort in the domain of engineering, or accounting, or operating methods. There is less appreciation of the fact that research and careful analysis by able lawyers is just as necessary and just as productive.

What Research Brings Out

For example, in this space in our November 7, 1955, issue we drew attention to an article in the November 1955 Cornell Law Quarterly, by Chairman Jervis Langdon Jr., of the Association of Southeastern Railroads—in which the author pointed out, with specific references, the amazing inconsistency of ICC decisions in the area of competitive rate-making. In some cases, the commission has followed the economic rule of letting the low-cost producer reflect his cost advantage in his rates. In other cases, the low-cost operator has been forced to hold an "umbrella" over his competitor.

This situation which Mr. Langdon so well outlined and documented is the best argument it is possible to make in behalf of changes in the ICC's regulatory powers, to forbid it to act anti-economically in the regulation of competitive rates.

Now another railroad spokesman, also educated in the law, has come along with some more valuable and practical research. This time it is David I. Mackie, chairman of the Eastern Railroad Presidents Conference. In an address he delivered on August 28 at the meeting of the American Bar Association in Dallas, he drew attention to an ICC recommendation in its most recent annual report, dated November 1, 1955, that legislation be enacted—

"to provide that motor contract carrier permits may be issued only upon a showing that existing common carriers are unwilling or unable to provide the type of service for which a need has been shown."

Quite obviously, if there were such a provision in the law, the problem which confronts common carriers in meeting the competition of contract carriers would be greatly simplified. However, in its comments on proposed legislation (H.R. 6141) to give effect to the Cabinet Committee Report on Transportation, as Mr. Mackie points out, the commission neglected to recommend this limitation. So the question arises as to just what the ICC *does* believe in, in the area of greater

equality of regulatory control over contract transportation. The speaker went on to draw attention to the present confusion over the functions proper to common, contract and private carriers; and to recommend clarifying changes in the definition of private and contract carriage. He also urged early action by the ICC in applying its rules on truck leasing.

Mr. Mackie's paper is 54 pages in length, and is a fully annotated treatment of the present unsatisfactory status of the law in the area of these three varieties of carriers. Few persons except lawyers and regulation specialists would be interested in encompassing the details of his careful exposition. Nevertheless, it is of the greatest importance to the public interest and to the orderly functioning of the transportation business that the questions Mr. Mackie raised be satisfactorily resolved. And questions won't be answered unless somebody first digs out the facts and takes the pains to ask them. Nothing is more detrimental to economic progress than confusion about what the law is, or than laws which are contradictory to economic reality.

Courts and commissions are not oracles, developing wisdom solely by their own effort. They do and must rely largely upon the lawyers and the witnesses who appear before them. And the thoroughness with which railroad lawyers have studied the pertinent data—and arranged for its effective presentation—quite frequently determines the outcome of important issues.

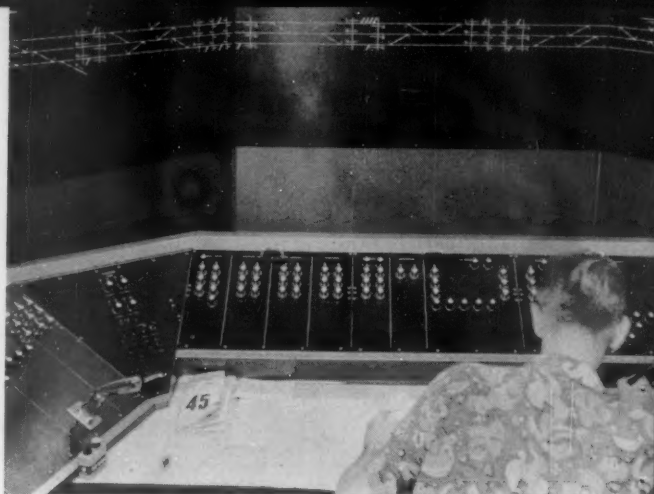
The questions which must be resolved to get regulation of competitive transportation on a sound basis lie largely in the field of economics—and not simple economics either. But the economic principles which should govern the outcome in these cases are not likely to be injected into the evidence or the argument, unless the lawyers involved will first take the time and the trouble to inform themselves thoroughly of the economic considerations which should be taken into account. The lawyers can get a lot of effective ammunition from the economists and the cost analysts—but, probably, in most cases the initiative will have to come from the lawyers.

What is the lawyer's job, anyhow? Is it just to keep his client on the safe side of the law? That is a part of his job, of course, but an equally important function is that of finding effective ways to make it possible for sound business and economic principles to get into actual practice.

Making Way for Innovation

The lawyer stands at the gateway through which all innovation must pass. He has to give due regard to the limitations which past experience has imposed—and it is his job to discover means whereby the new may be fitted into harmonious operation with the old. There's hardly any job around a railroad that is more important—especially in an era of rapid change.

CONTROL BUTTONS are on the console within the dispatcher's reach, and the illuminated track diagram is large enough to be easily visible to him.



ONE MAN HAS CONTROLS OF 14 . . .

Interlockings at His Fingertips

New type machine has simple, fast and accurate manipulation to handle 122 trains daily on 35 miles of three-track line

An improved type of interlocking machine is used by the Burlington for consolidated control of numerous sizable interlockings in its multiple-track, heavy-traffic Chicago terminal territory. Manipulation is simple, fast and accurate, this being attained by placing the controls on a few small panels arranged like the console of a pipe organ, all within reach of one man seated in his chair.

This consolidated interlocking, manufactured to Burlington requirements, uses the entrance-exit system of controls, but in a new way. Conventional entrance-exit machines (on the market since 1937) have each

consisted of a large illuminated diagram including not only control buttons but also illuminated symbols to represent signals, and engraved track lines with indication lamps to repeat track occupancy routes. If these practices had been used to construct a machine for the 14 interlockings in this Burlington project, the machine would have totaled perhaps 50 ft or more in length, which quite likely would have required two or more levermen all the time, and a train director "to call the shots." The manipulation with the new type machine is faster because one man can coordinate his thoughts and ac-

tions more effectively than two or more men.

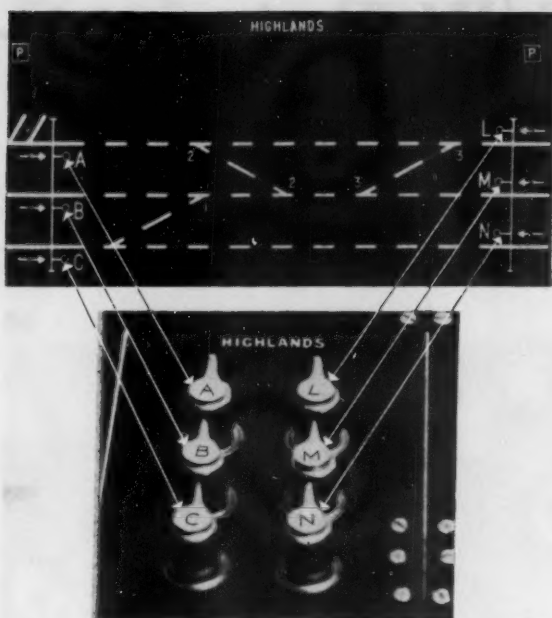
The utmost in concentration, simplicity and speed of manipulation of entrance-exit controls was attained by several new features of design. The illuminated track diagram was taken off the control machine, and placed on separate raised panels about 7 ft from the dispatcher's seat. This permitted the diagram to be made 24 in. high and 30 ft long, thereby improving the legibility of indications displayed. By distinct lines-of-light and lamps, this diagram shows the dispatcher the routes lined up and the locations of trains

WHY SO MANY INTERLOCKINGS?

Western Avenue interlocking is at the west end of the Western Avenue yard, where the Burlington has a line south to numerous industries, and for interchange with 12 other railroads. Cicero B interlocking connects to the east end of a new gravity classification yard. Cicero C interlocking includes yard lead connections. To move cars quickly in either direction between the yard and the freighthouse, which is north of the main tracks, two single-track lines were constructed, at grade, across the three-track main. The crossing at the east end is in interlocking Cicero A, which also includes four main-track crossovers. The crossing at the west end is in LaVergne interlocking, which also includes nine crossovers at the west end of the yard.

Congress Park interlocking includes five main-track crossovers and an interchange connection with the Indiana Harbor Belt. The interlockings at Kedzie Avenue, Highlands, West Hinsdale and Downers Grove (and those to be installed at Fairview and Naperville) are primarily crossover layouts. Eola interlocking is at the east end of Eola yard and includes an interchange connection with the EJ&E. West Eola interlocking includes a connection from west end of the yard to the main tracks.

Of the 14 interlockings, three are at locations where mechanical equipment was previously in service, seven where electric interlockings were in service, and four where there were no interlockings. The signals at these interlockings, all controlled by the dispatcher, serve also to authorize train movements. Thus this entire multiple-track terminal territory, 35.4 miles, including 110 miles of main track, is actually under centralized traffic control.



ON THE CONSOLE, (above) these six buttons control all the routes through Highlands interlocking.

and their direction of movement. A train graph records movement of trains through automatic block.

Only the actual pushbuttons are placed on the panels of the console type control machine. For each interlocking, there is a set of buttons consisting of two vertical rows $1\frac{1}{2}$ in. apart. An interlocking such as Highlands is controlled by just six buttons, on a panel only $4\frac{1}{2}$ in. wide. A length equal to that of an ordinary desk can include controls for a dozen or more interlockings.

Having concentrated the controls within reach of one man, the next step was to simplify the manipulation—to make it easy, fast and accurate. The secret in this is standardization of arrangement and lettering of buttons for all main-track routes at all interlockings. On the panel for every interlocking, the left vertical row of buttons are A, B, and C for eastbound trains on tracks Nos.

1, 2 and 3, respectively. The right-hand row are L, M and N for westbound trains on tracks Nos. 1, 2 and 3.

To control any interlocking, the dispatcher pushes the button for the track on which the train is approaching, and then pushes the button for the track on which it is to depart. Switches go over, and the signal clears. When the train passes through the interlocking, the controls return to normal position with no further attention by the dispatcher. When manipulating this machine the dispatcher puts his thoughts into action directly. Easy, fast and correct manipulation gives one man effective control of 14 sizable interlockings on 35 miles of busy, three-track railroad.

The next step in design was to transmit the controls to the field locations as fast as, or faster than, the dispatcher could push the buttons. This is accomplished by a new adap-

tation of electronic carrier frequency equipment, by which the same pair of wires can simultaneously transmit numerous control codes and bring back numerous indication codes. Independently operated systems are used between the office and each of the 14 interlockings, all over two line wires. Controls go out and indications are returned in a maximum of three seconds.

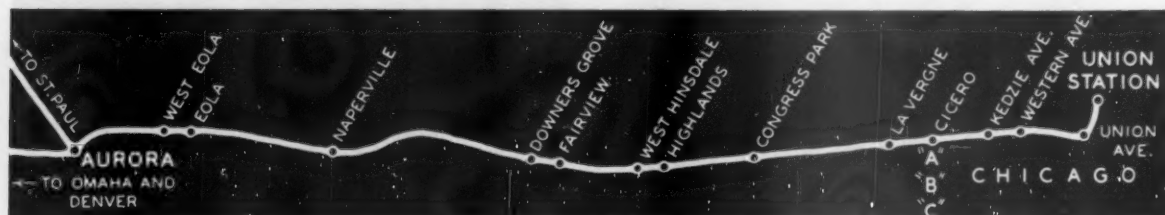
This project was planned and constructed by Burlington signal department forces under the direction of A. L. Essman, chief signal engineer. The new console type control machine, and track diagram, as well as new switch machines and signals where required, were furnished by the General Railway Signal Company. A more detailed explanation of many of the engineering features of this project appears in the September Railway Signaling & Communications.

ON THE TRACK DIAGRAM (left) this 2-ft portion indicates routes and movements at Highlands interlocking.

A MIGHTY BUSY RAILROAD

The scheduled traffic on the 35 miles of three-track line between Union Avenue, Chicago, and Aurora includes 32 through passenger trains, 66 suburban trains, about 24 through freights and 90 to 100 transfer cuts and switching moves. Eight through passenger trains have a conditional stop at LaGrange, and one has a scheduled stop at Naperville. Local passenger trains stop at all the 25 stations, and express trains stop at some stations. Trains must be on an outside track at Downers Grove and Cicero when making station stops.

Some inbound through trains are scheduled during the morning peak of inbound suburban trains. In the evening, some through freights go west through the westward evening suburban peak. To secure track capacity to handle these peaks, either one way or the other, and to make runaround moves, each of the three main tracks is signaled for operation in both directions, and power operated crossovers are incorporated in the 14 interlockings, as listed on the facing page.



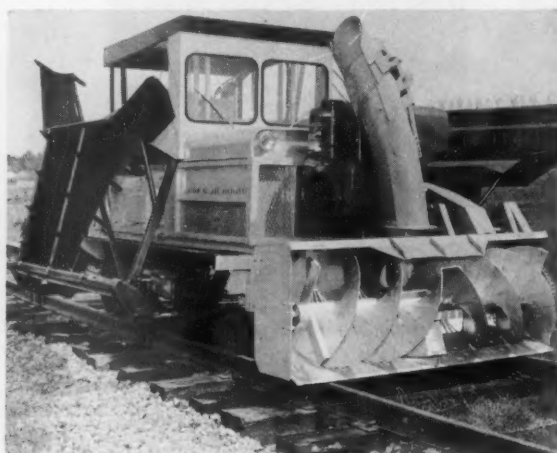
THE 14 INTERLOCKINGS between West Eola and Western Avenue, inclusive, are to be controlled by one machine at Cicero.

What's New in M/W Equipment—

With 276 booths occupied this will be the largest display ever held by the sponsoring associations—On these pages are pictured some of the products that will be seen at an exhibit for the first time



BOLTING MACHINE for removing or tightening nuts on 4 or 6 joint bolts at same time. Head has six air wrenches operated by master lever; there are individual controls too. *Railway Maintenance Corporation.*



ROTARY SNOW PLOW attachment mounted on front of ballast regulator. Rotary device breaks up and feeds snow to blower which is said to discharge it a minimum of 40 ft from the track. *Kershaw Manufacturing Company.*

FACTS ABOUT THE CONVENTION

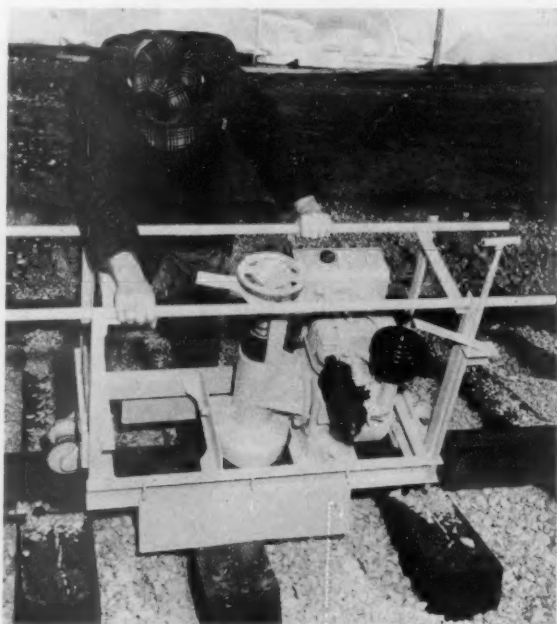
The annual meetings of the Roadmasters' and Bridge & Building Associations will convene in a joint session in the Conrad Hilton Hotel, Chicago, at 10:00 a.m. on September 18. After this initial half-day joint session they will meet separately, adjourning at noon on Thursday, September 20. The sessions will consist mainly of the presentation and discussion of committee reports on subjects of particular current interest to the members. There will also be a number of addresses, including several by railway executives as follows:

● J. P. Newell, vice-president, Pennsylvania, on "The Road Ahead"—10:00 a.m., September 18.

● R. J. Stone, vice-president operations, Frisco, on "People, Precision and Progress"—11:15 a.m., September 18.

● R. E. Johnson, vice-president operations, Rock Island, on "What Good Maintenance of Way Forces Mean to the Operating Department"—10:15 a.m., September 19 (Roadmasters' session).

To allow members ample opportunity to visit the exhibition, no sessions are scheduled for Wednesday afternoon, but the annual banquet will be held that evening in the Grand Ballroom of the Conrad Hilton, starting at 6:30.



SURFACE GRINDER for rail. Mounted on two double-flanged rollers which, with the frame, form a built-in straight edge. Cup wheel 8 in. in diameter is driven by an 8.4-hp air-cooled engine through bevel gears in an aluminum housing. *Nordberg Manufacturing Company.*

Preview of a Record Exhibit

THE EXHIBITORS: Member companies of the Track Supply Association and the Bridge & Building Supply Association.

THE PLACE: The Coliseum, Chicago

THE TIME: September 17, 18, 19 and 20

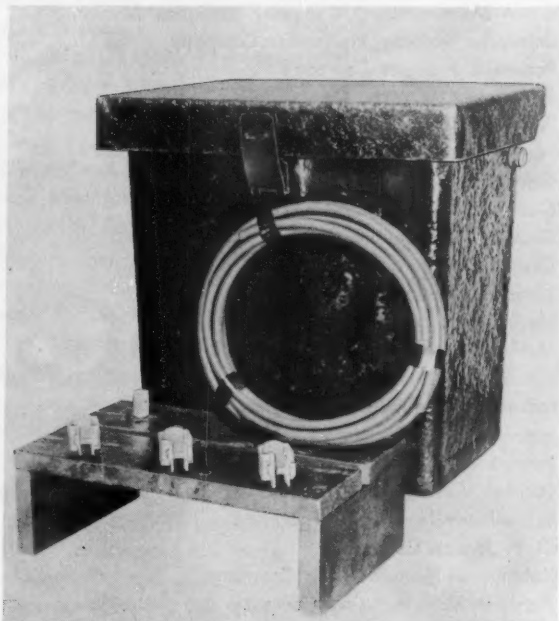
THE OCCASION: Annual conventions of the Roadmasters' & Maintenance of Way Association and the American Railway Bridge & Building Association



INSPECTION MOTOR CAR consisting of Pontiac station wagon equipped with flanged guide wheels of load-bearing type. Raising guide wheels allows unit to operate on highways in normal manner. *Fairmont Railway Motors, Inc.*



FRONT-END LOADER for crawler tractor. Has 1-cu yd bucket with 40-deg tip-back action to allow operator to obtain capacity load. Unit-frame construction affords maximum stress resistance. *Caterpillar Tractor Company.*

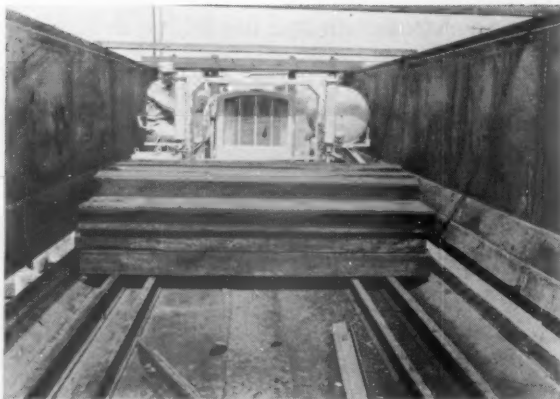


BATTERY HOUSINGS of glass-fiber-reinforced plastic. For use with air-depolarized cells in electric switch lighting. Designed to be partially buried in ballast or ground. Comes with two-conductor cord, grip and cable clamps, and battery platform. *Western Railroad Supply Company.*

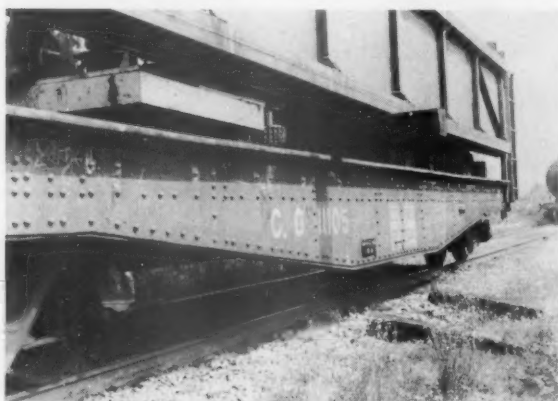


UTILITY WHEEL TRACTOR which, in this view, is operating a mowing blade. This is a 42.8-hp rubber-tired unit. Tractor may also be fitted with a front-end loader and a rear blade for grading and shaping roadways and slopes. *International Harvester Company.*

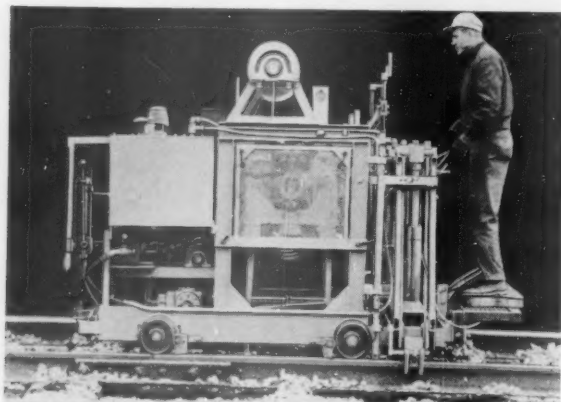
EXHIBIT PREVIEW



TIE-UNLOADING MACHINE designed to unload ties from special gondola cars as it moves through them. Machine moves into car on rails until its front end is against ties which are loaded at right angles on another pair of rails at a slightly higher elevation. Ties are . . .



. . . **EJECTED** from car by a "finger" fastened to a horizontal chain that moves around sprockets at each end of machine. One end of chain is visible in this view. By varying engine speed ties can be placed close to car or five or six feet away. *Railway Maintenance Corporation.*



TAMPING POWER JACK for raising track and tamping ties to hold raise. Has one tamping head which carries four tamping bars, set in pairs inside of each rail. Tamping head raised and lowered hydraulically. *Nordberg Manufacturing Company.*

List of Exhibitors

Achuff Railway Supply Company
 Aldon Company
 Allied Chemical & Dye Corp., General Chemical Division
 Allis-Chalmers Manufacturing Company
 American Brake Shoe Company, Ramapo Ajax Division
 American Chemical Paint Company
 American Hoist & Derrick Co.
 American Railroad Curvelining Corporation
 Armco Steel Corporation
 Austin-Western Works, Construction Equipment Division,
 Baldwin-Lima-Hamilton Corporation
 Barber-Greene Company
 Barco Manufacturing Company
 Barthel & Associates
 Bernuth, Lembcke Company
 Binks Manufacturing Company
 Bird & Son, Inc.
 R. H. Bogle Company
 Briggs & Stratton Corp.
 Philip Carey Manufacturing Company
 Caterpillar Tractor Company
 Chicago Pneumatic Tool Company
 Chipman Chemical Company
 Clementina, Ltd.
 Continental Motors Corporation
 Cullen-Freistedt Company
 Dearborn Chemical Company
 Deckert Corporation
 Dow Chemical Company
 E. I. duPont deNemours & Co.
 Electric Tamper & Equipment Co.
 Eaton Manufacturing Company, Reliance Division
 Enterprise Railway Equipment Company
 Fabreeka Products Company
 Fairbanks, Morse & Co.
 Fairmont Railway Motors, Inc.
 Foundation Equipment Corporation
 Gary Slag Corporation
 Gorman-Rupp Company
 Gravely Tractors, Inc.
 Gray Company
 Brice Hayes Company
 Hayes Track Appliance Company
 Hubbard & Co.
 Illinois Bell Telephone Company
 Industrial Brownhoist Corporation
 Ingersoll-Rand Company
 International Harvester Company
 Jackson Vibrators, Inc.
 Johns-Manville Sales Corporation
 O. F. Jordan Company
 Kalamazoo Manufacturing Company
 Kershaw Manufacturing Company
 Koehring Company
 Kohler Company
 LeRoi Division, Westinghouse Air Brake Company
 Le Tourneau-Westinghouse Company

Link-Belt Speeder Corporation
 Linde Air Products Company, Division of
 Union Carbide & Carbon Corp.
 Maintenance Equipment Company
 Mall Tool Company, Division of Remington Arms, Inc.
 Massey Concrete Products Company
 Master Builders Company
 Matisa Equipment Corporation
 Mid-West Forging & Manufacturing Co.
 Minnesota Mining & Manufacturing Co.
 Modern Railroads
 Mon-O-Coach, Inc.
 Morrison Railway Supply Corporation
 Motorola Communications & Electronics, Inc.
 National Aluminate Corporation
 National Blue Print Company
 National Lock Washer Company
 Nolan Company
 Nordberg Manufacturing Company
 Northwestern Motor Company
 D. W. Onan & Sons, Inc.
 Osmose Wood Preserving Company of America
 P. & M. Co.
 Pacific Coast Borax Company
 Permamix Corporation
 Pettibone Mulliken Corporation
 Pocket List of Railroad Officials
 Pullman-Standard Car Manufacturing Company
 Q&C Co.
 Racine Hydraulics & Machinery, Inc.
 Rail Joint Company
 Railroad Products Company
 Railroad Rubber Products, Inc.
 Rails Company
 Ridge Tool Company
 Railway Age—Railway Track and Structures
 Railway Maintenance Corporation
 Railway Purchases and Stores
 Railway Track-Work Company
 Reade Manufacturing Company
 Rust-Oleum Corporation
 Schramm, Inc.
 Spaulding Fibre Company
 Sperry Rail Service
 Spray Starting Fluid Company
 Teleweld, Inc.
 Templeton, Kenly & Co.
 Timber Engineering Company
 True Temper Corporation
 Warner & Swasey Co.
 Warren Tool Corporation
 Wellman Engineering Company
 Western Railroad Supply Company
 White Manufacturing Company
 Wisconsin Motor Corporation
 Woodings-Verona Tool Works
 Woolery Machine Company
 Young & Greenwalt Co.



DEAD HEAD DETECTOR for operation ahead of tie adzers to locate "dead heads" or broken, hidden spikes in ties. Detector operates magnetically. Machine is fitted with small compressor and air hammer for driving down dead heads. *Kershaw Manufacturing Company.*



CRIBBER-ADZER which, operated by one man, cribs ballast from between the ties and adzes ties in one operation. Machine is equipped with cribbing brush, three adzer heads and a device for applying creosote to the adzed surfaces. *Kershaw Manufacturing Company.*

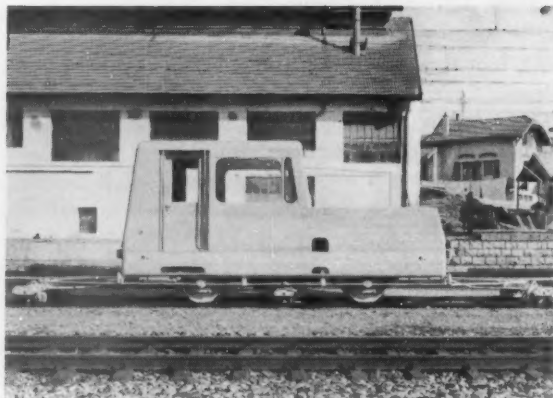


CARRYABLE SPREADER for granular weed-control chemicals. Covers a swath about 6 ft. wide. Calibrated for adjustable rates of application. Unit weighs 6 lb and will hold about 25 lb of chemical. Shoulder strap leaves hands free. *Pacific Coast Borax Company.*

EXHIBIT PREVIEW



SPOT TAMPER combines jack and four independent tamping heads which may be operated in pairs, or singly or all four at the same time. May be used as spot tamper or as production tamper in reconditioning gangs. *Kershaw Manufacturing Company.*



TRACK INSPECTION CAR for measuring and recording track conditions, and detecting and locating track defects. Furnishes graph of high and low spots on both rails, super-elevation and midordinates on curves, irregularity of cross-level, and gage. *Matisa Equipment Corporation.*



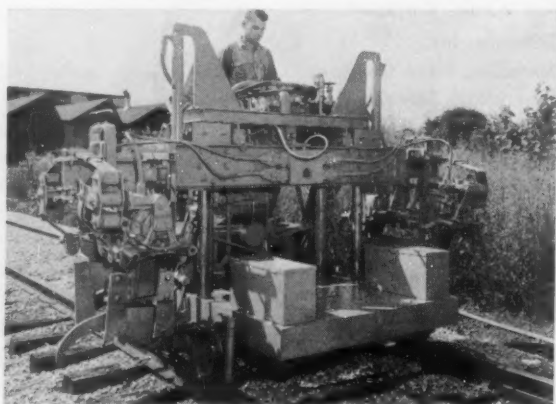
FLANGED GUIDE WHEELS, optional for one-man operation of Railroad Gradall, are said to permit operator to devote full time to operation of the machine. Air cylinders keep guide wheels on the rails and compensate automatically as the rubber tires ride up over crossings, frogs and switches. *Warner & Swasey Co.*



BALLAST-MAINTENANCE CAR can be equipped with ballast plow, ballast-equalizing boxes, scarifiers, discs and track broom. Attachments are raised and lowered, and otherwise adjusted, hydraulically. Machine has 6-cylinder engine, clutch, torque converter, and three-speed transmission. *Fairmont Railway Motors, Inc.*



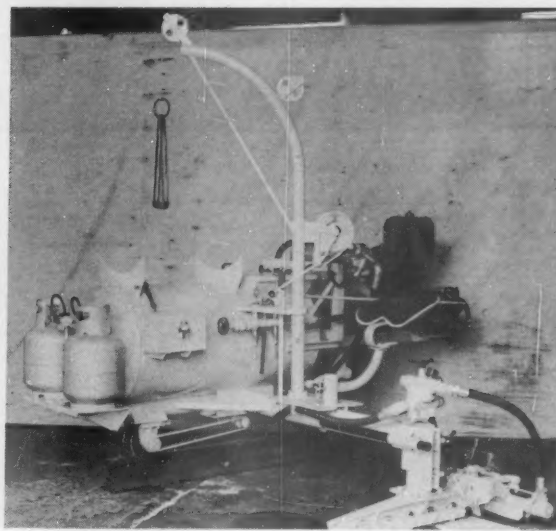
BALLAST CLEANER for spot cleaning of ballast without the use of work trains. Conveyors pick up old shoulder ballast and deposit it on sifting screen, whence it can be placed either on the center of the track or the shoulder. *Kershaw Manufacturing Company.*



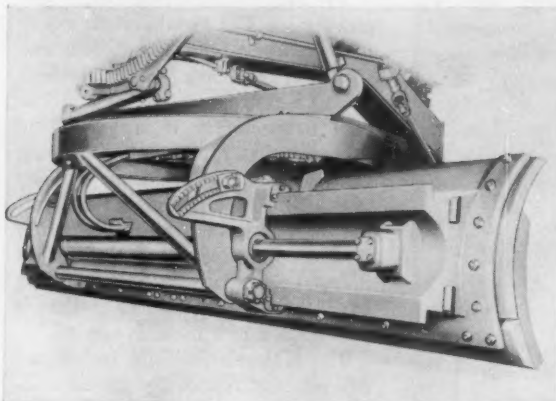
COMBINATION machine incorporating hydraulic power jack and tie nipper, electric tie tampers and automatic track-leveling device. Has 60-hp engine, 7.5-kw 110-volt generator, and Vickers hydraulic pump. *Kalamazoo Manufacturing Company.*



RUBBER-TIRED CRANE with 15-ton lift capacity, $\frac{1}{2}$ -cu yd dipper capacity and a top travel speed of 21 mph. One-man operated. *Koehring Company.*



APPLICATOR for applying a plastic material to newly adzed tie surfaces when relaying rail. Propane gas heater keeps material liquid. *Fairmont Railway Motors, Inc.*



HYDRAULIC MOLDBOARD offsetting attachment for motor graders. Said to be especially useful where extreme blade positions are necessary for operations on low, flat slopes, shoulders or high banks. Hydraulic cylinder allows 27 in. travel to right, 21 in. to left. *Caterpillar Tractor Company.*



PROPULSION UNIT for Dun-Rite gaging machine and pregager. Unit has a single, power-driven crawler which runs on top of the ties. It reduces the number of men required in this method of gaging from five to three. Can be added as propulsion unit to any existing gaging machine of this type. *Nordberg Manufacturing Company.*



SKID-SHOVEL for mounting on crawler tractor, which can operate also as a "bulldozer," bulldozer or clamshell. On same job it was used for moving rubble, transporting dirt, moving rolls of wire, towing wheeled equipment. *International Harvester Company.*



RAIL RELAYER attachment for crawler tractors, which lays rail with only one man and a helper. Hydraulic ram on the machine picks up the rail and lays it to gage. Machine also has crane boom for setting other equipment on and off track. *Kershaw Manufacturing Company.*

Running Fast by Stopping Fast

Meet a company that first prospered on its ability to stop trains but now, in 1956, puts a lot of money, time and manpower into developing products to make trains run faster and safer.

The American Brake Shoe Company 54 years after its founding carries on its domestic business in ten divisions, plus a recently acquired subsidiary; operates 56 plants, and employs over 9,000 people.

Of great importance to the railroad business is the fact that Brake

Shoe is putting more money and technical know-how into research than ever before. In the past ten years the company has spent \$14,000,000 on research facilities.

Although Brake Shoe has been one of the leaders in modern industry's trend to diversification, the company only two years ago completed a new \$250,000 bearing laboratory at its Mahwah, N. J., Research Center to help solve the hot box problem.

The company's research and testing equipment includes such basic

units as tensile testing machines and experimental heat-treat furnaces, and a custom-made machine that subjects railroad ties to impacts rivaling those of a heavy locomotive hitting a turn at high speed.

The Mahwah Research Center employs some 170 metallurgists, chemists, engineers and technicians and spends \$1,500,000 a year on research in which railroads figure as a prominent beneficiary. It is difficult to estimate what Brake Shoe spends on railroad-oriented problems in any one year. Investigations that start out in the metallurgical laboratory to find newer and tougher alloys for industry generally, may ultimately have the results for the railroads just when a new metal is needed.

The Mahwah facilities include an experimental foundry, chemical laboratory, metallurgical laboratory and railroad laboratory. All four, plus the firm's manufacturing divisions, comprise a team available in any degree of concentration for work on railroad problems.

The experimental foundry helped unravel basic problems of the cast-steel wheel. The chemical laboratory has worked several times on such projects as composition brake shoes; the metallurgical laboratory, as an obvious helpmate to the railroad laboratory, has contributed to such projects as hardfacing, manganese steel and rail hardening.

Brake Shoe now is carrying on over a dozen major railroad research projects. Among them are continuing development work on brake shoes, including intensive development work on composition brake shoes and facilities for manufacturing the product. The brake-shoe testing machine at Mahwah works on a round-the-clock basis. The bearing

WHY THIS RESEARCH SERIES?

The idea behind this Railway Age series, under the general heading of "Contributions to Railway Research," is to show, by a group of articles, the extent to which research in the interest of the railroad industry is carried on by manufacturers in the railway supply field. The first article in the series appeared in Railway Age, Aug. 13.

The railroads have long been criticized for backwardness in research by uninformed people outside the industry. Actually, the industry's activity compares favorably with other industries. Its achievement is a cumulative job, in which the AAR and many individual railroads participate. Manufacturers of railway supplies have a particularly important role in the industry's research program.

Large-scale research operations, either wholly or chiefly devoted to the production of better transportation by railroad, are described in these articles. The material is provided on invitation by representative companies to report in their own way their own research contributions, and the series does not undertake to cover the entire research activity under way in the railway supply industry, or even in any one segment of it. The order in which articles appear has no relation to the relative importance of the companies concerned. The series nevertheless will serve to show convincingly the impact on the railroad industry, and thus on the whole American economy, of the continuing research going on in the industry to make more efficient railroad operation possible.

This is the story of American Brake Shoe

laboratory staff foresees no end to its assignments, following development to production of the Redipak lubricating pad for journal bearings.

As to Brake Shoe's research contributions in brake shoes, there is an apparent paradox in the argument that stopping trains more safely and surely is actually an aid to making them go faster. Yet the reasoning is A-B-C. The train that can stop in a shorter distance has that much more track to make time on. Also, with better than 60,000 miles of curves included in the nation's trackage, efficient braking is extra protection in high speed operation.

Stopping trains was long considered a minor detail by railroads. Brake shoes in the old days were made of stone—and wood! Those wooden shoes, mounted on wooden coaches, set many trains on fire before some brighter minds hit upon cast iron.

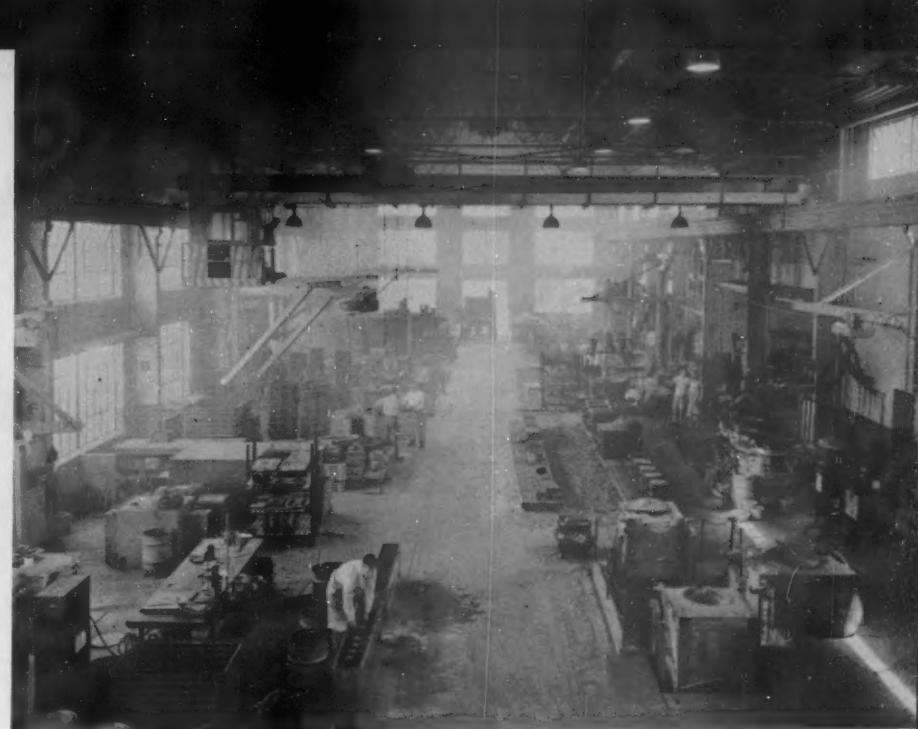
In 1839 a railroad engineer, F. W. Sargent, designed and built the first brake-shoe testing machine. It was a miniature device and the wheel that its model-sized shoes stopped was 11½-in. in diameter.

The Sargent Laboratory

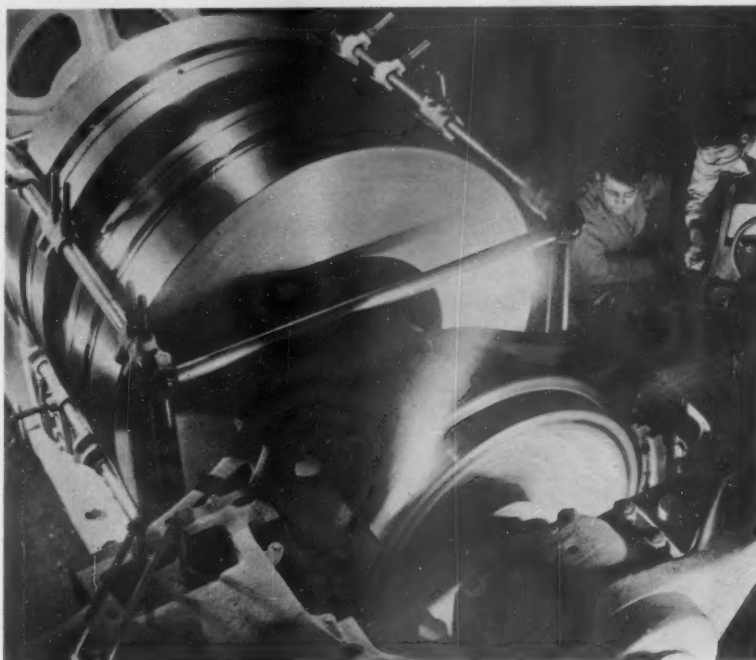
That pint-sized testing machine helped to usher American Brake Shoe into the world. And it made the name Sargent famous in the railroad braking field. In 1908, Brake Shoe put its own full-sized brake-shoe testing machine into operation, under the direction of a chief engineer—the same F. W. Sargent. Today, the Sargent Laboratory at the Mahwah Research Center works full-time on brake-shoe development.

Today's high-capacity brake-shoe testing machine at the Research Center is, of course, larger and vastly better than the 1908 version. The whole history of the railroads' achievements in braking faster and heavier trains can be charted by the curves on the test machine's recording instruments. Present Brake Shoe test equipment can simulate the stop-and-go performance of trains operating up to 160 mph, with wheel loads from 4,000 to 40,000 lb.

As train speeds and loads have increased, the problems of stress and friction also increased. Major brake shoe improvements before the company "got into the act" included steel backs and an expanded steel



ABOVE: American Brake Shoe's experimental foundry at Mahwah, N. J. **BELOW:** Reproducing the effect of a freight or passenger train carrying two to 20 tons on each wheel, this specially designed dynamometer is capable of testing both brake shoes and wheels.



inner structure, to hold the cast-iron mass together. On these two developments, Brake Shoe research worked out scores of technical improvements. Results, over the years, have been relative increases in braking efficiency, service life, and operating economy. As an example of the many problems, the expanded metal in early attempts at manufacture melted down with the cast iron, leaving internal rifts that made the whole brake shoe weaker than before.

The solution was a coating on the expanded steel to protect it. In 1936, the Association of American Railroads approved the steel-backed, steel-reinforced brake shoe as a standard for freight service. It had been used in passenger service.

For high-speed passenger-train operation, Brake Shoe presented the industry with the carbon insert brake shoe. Like raisins in a cake, rectangles of carbon spice the inner surface of the cast-iron shoe at regular

intervals. The result is a major contribution to high-speed, fast-stop operation.

The carbon, flush with the cast-iron surface, unites with oxygen under the heat of friction, channeling that element off as carbon monoxide and diverting it from combining with the metal of wheel and shoe.

While cast-iron brake shoes, including those with carbon inserts, have long since won top grades for performance in stopping trains, Brake Shoe began more than 30 years ago to explore the potentials of composition brake shoes.

Back of the attack on this problem were two basic incentives: (a) awareness that the economics of the iron brake shoe might be improved and (b) recognition that available composition materials provided some characteristics superior to those of cast iron, while also possessing some inferior qualities. The goal was to find a material for the composition shoe which would retain all the virtues and none of the vices.

Results of these studies proved so promising that they led to formation of the company's American Brake-blok Division, which has long been producing and selling braking materials to the automotive field.

While the perfect all-purpose composition brake shoe for railroads has yet to be produced, the company's researchers see hints of ultimate success.

Bearing Lubrication

Moving to the other extreme in the laws of motion, behold Brake Shoe's enterprise on the many-phased problem of journal bearing lubrication. You begin with the solid journal bearing, which has been carrying the freight and passengers of a nation on its back for years, and doing a wonderful job. Brake Shoe's philosophy is that the solid bearing within a standard journal box goes on and on for two reasons: (1) it is simple and it works; (2) its replacement would be expensive.

Brake Shoe set up its new bearing laboratory in 1953 to provide complete facilities for studying journal bearings and problems relating to their lubrication. In this two-story building are test stands for turning axle stubs in journal boxes for hours on end. On another rig a standard car truck may be submitted to every

possible kind of service twist and strain. The major facility is the climate chamber, within which a full-sized axle with journals at each end really "gets the works"—temperature extremes from 40 deg below zero to 125 deg above—and load possibilities up to 40,000 lb per journal.

Out of Brake Shoe work that began before the new laboratory was set up have come such contributions as the Redipak journal bearing lubricator, and such development projects as the cartridge bearing, and renewable journal sleeve for reclaiming worn axles. The cartridge bearing is a one-piece universal unit, containing its own Redipak lubricating pad and sealer, that fits any standard journal box, for either freight or passenger service.

The Redipak is a pad of foam neoprene completely encased in a slip cover of cotton wicking. That, plus large brass grommets at the corners to aid in inserting and removing, is all there is to it.

Brake Shoe's "Southern Cast Steel Wheel" is a product of more than 14 years' development work, including eight years and more than 5,000,000 miles of testing. The casting techniques make possible a uniform structure, with 1.5 per cent carbon steel; the wheel is cast in sand molds and cured with a double heat treatment. Tread, flange, bore, rim and front hubface are machined at one chucking on special vertical turret lathes which progress through all operations automatically. Late last summer the new wheel went into full production at a new \$4,000,000 plant of Southern Wheel Division at Calera, Ala.

Back of the exhaustive research which gave birth to the cast-steel wheel was the company's recognition that freight cars are working almost twice as hard as they did before World War II. This increased workload includes heavier wheel loads and higher speeds. Thus, wheel "turnover" becomes an increasing factor of expense.

Test runs of the new wheels had averaged over 125,000 miles of road service and were still rolling as of April 1956. Two test cars rolling on the new wheels turned in better than 350,000 miles before the first wheel change. No test wheel failures occurred in any of the eight years of trial runs on various types of cars of different capacities.

While the dynamics of heavy trackwork may be old hat to railroad men in the maintenance-of-way end of the business, a few basics are worth recalling. Every 2½ seconds across the country a train is either starting a journey or completing one. A single wheel of a heavily loaded freight car jogging across a frog or a switch may hit the forward side of a gap with an impact of 33,000 foot-pounds. Collectively over the continent you can easily imagine an endless battery of heavy hammers working night and day to wear out trackwork as fast as it can be restored or replaced.

In the face of more and faster trains carrying greatly increased loads, Ramapo Ajax has developed trackwork that lasts twice as long as it did 25 years ago.

Twenty years ago Ramapo Ajax engineers tackled the problem in force. The impact-bearing parts of trackwork then, as now, were made of manganese steel, which at points of impact "flowed" under the punishment. Wheels would pound the manganese steel down a quarter of an inch or more. Rough rides resulted. Constant vigilance and frequent maintenance were essential.

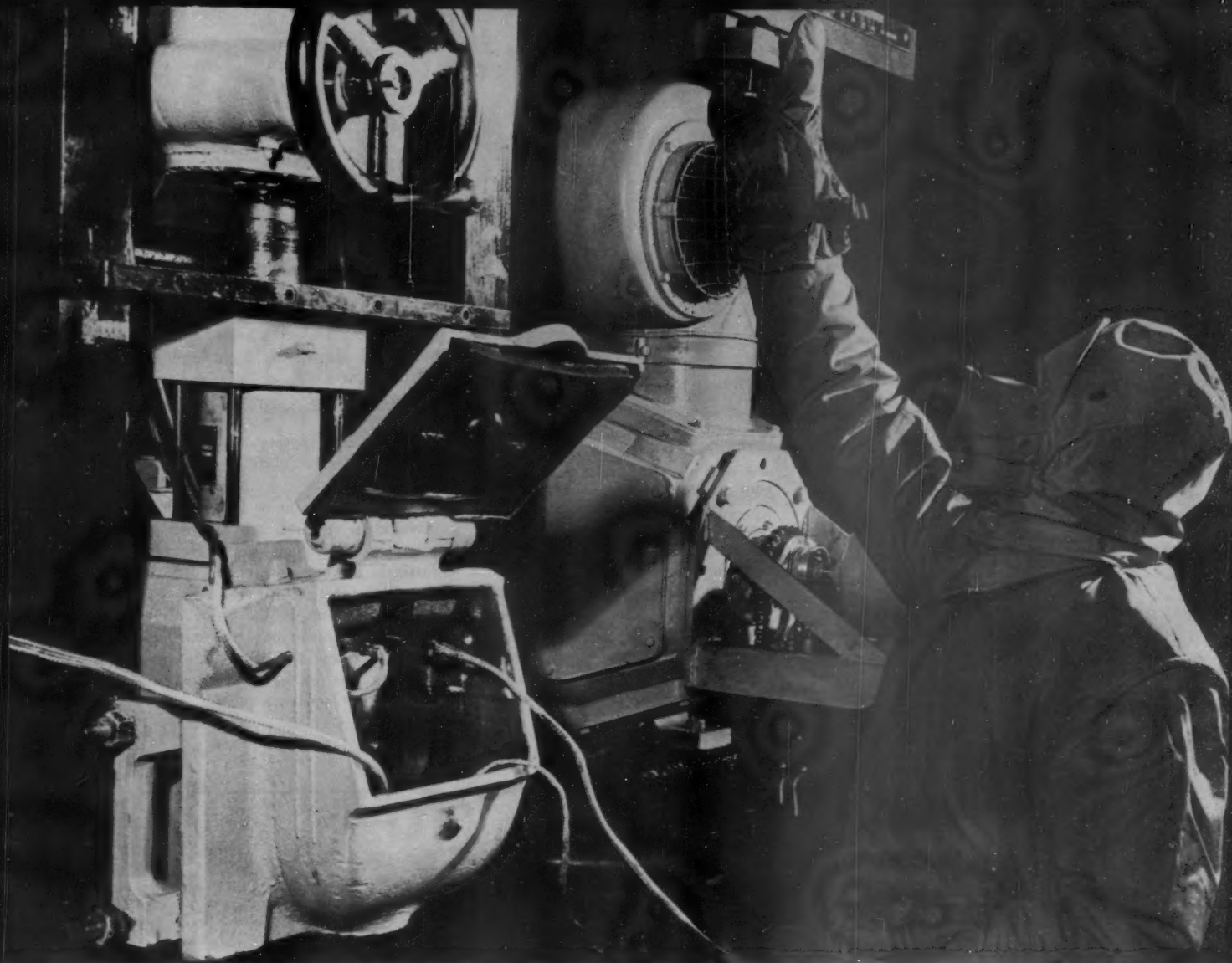
Ramapo Ajax engineers took notice of the common pessimistic view about manganese steel; the view that the metal was bound to flow until the punishment of service had work-hardened it.

"We'll work-harden it first!" was their notion. But it was one thing to think up the solution, quite another by research to find the means to make it work. The answer did not come in one piece. Rather, it was a case of presenting the railroads with increasingly better trackwork over two decades, and the end is not yet in sight.

Out of the long effort came an upgrading in the hardness of trackwork than can be set down mathematically.

Twenty years ago, newly installed manganese steel castings had a hardness of 190 Brinell; today, the same metal surfaces test up to 400 Brinell before they leave the factory. In this development, hundreds of trackwork castings were work-hardened progressively, then sawed apart so that hardness at varying depths could be checked.

After the first studies of manganese flow and hardening character-



PROTECTED AGAINST 40 below zero temperature, a technician calibrates pendulum load on the journal bearing.

istics, Ramapo Ajax came up with two main practical measures to double the life of trackwork, viz:

- Build impact-bearing parts deliberately over-size; in effect, cast a pad or hump into each unit at points of surface impact.

- Develop procedures for correctly work-hardening the manganese steel and attain a desirable hardness reaching well below the surface.

As another contribution to the field of trackwork, Ramapo Ajax came up with the reversible manganese steel crossing insert. This is the critical, hard-wearing member. Normally, only the "receiving" side of the insert takes the crashing impact. By making a symmetrical surface, the unit becomes fully reversible. A track gang can quickly lift up the insert and turn it around 180-

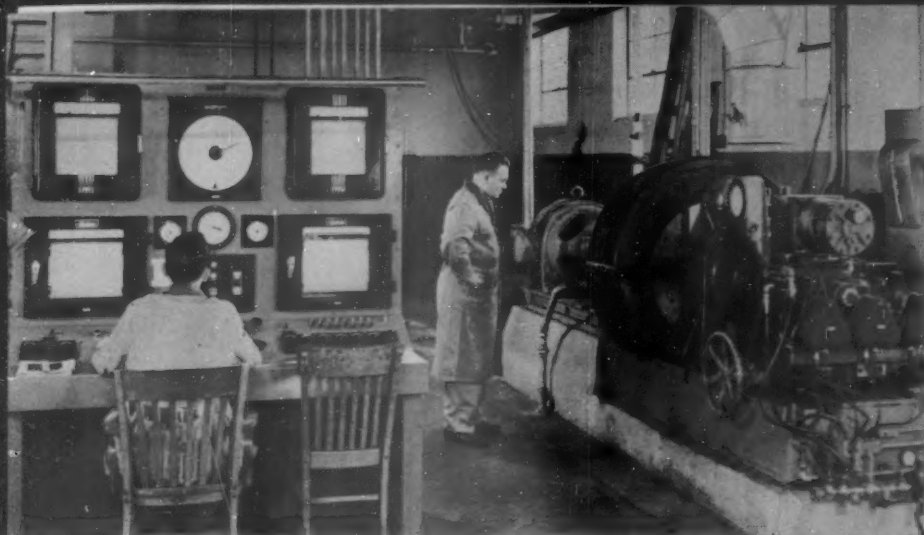
deg. The hard-hit receiving end then gets a vacation while the former rearward side presents a fresh face for wheel blows.

Brake Shoe, with other companies, helped give railroads new materials, new equipment, and new methods for weld-repairing worn trackwork. This was a joint achievement of the Research Center at Mahwah, with the Ramapo Ajax and American Manganese Steel Divisions. Railroads themselves were on the development team.

Another assignment the company cut out for itself was that of finding a welding material with yield strength at least as high as the metal worked on. The ultimate result was a choice of welding rods. Molybdenum got into the act. Ordinary manganese steel showed a yield



This machine with automatic welding head is used to test performance of rods and alloys



THIS DYNAMOMETER is one of many used for testing organic and

sintered metallic brake materials in addition to testing clutch material.

strength of 52,000 psi. "Moly-manganese" steel runs the count up to 63,000 psi.

Brake Shoe also learned that a weld repair job can stand up as long as the original metal only if it's done right.

Studies with welding techniques

showed that a low arc and large sized welding "beads" contribute to freedom from cracks. The American Manganese Division found itself providing training courses for railroad welders. The instruction is available for new welders and also as refresher schooling for oldtimers.

Another research development, produced by Brake Shoe itself, is a device for diesel locomotives known as the Three-in-One Controller, which (1) detects the sliding of wheels in braking and signals the engineman; (2) detects and corrects spinning of wheels, and signals accordingly; and (3) detects locked wheels immediately and signals by light and by audible alarm.

The philosophy back of the company's major research efforts on railroad projects is actually a vote of confidence in the future of rail transportation: "Our research staff has set sights on growth fields where dollars invested in research are justified by expectation of new and profitable business in future years. . . . Brake Shoe's reputation for research was established first in the railroad industry. A continuous research program is essential in maintaining a reputation as one of the leading suppliers of replacements parts."

Railroading

After Hours

Passengers as Friends

I'd be happier if I could get out of my mind the belief that nine out of ten people judge the railroad industry by their experience as passengers. Too often the experience is depressing.

For example, the other day I took a trip of several hours' duration in a parlor car. It was a comfortable car. The train was a fast one and the engineer handled it well—physically the trip was most pleasant.

However, the car had only about a dozen passengers in it—and thin patronage is a negative factor. The curious customer, when he sees a service poorly patronized, suspects something is wrong; and he begins to wonder what it is.

The right kind of porter and crew could probably have offset—at least in part—the depressing effect of light patronage. That is, if their treatment of the passengers had been genuinely attentive and friendly, that would have been the impression the passengers would have carried away with them, when their trip was completed.

But, unhappily, the porter and crew didn't do much to clear up the gloomy atmosphere. A woman passenger started to smoke—there being no sign to indicate that smoking was

by
James G.
Lyne



Editor,
Railway
Age

restricted to some seats in the rear. The porter bore down upon her quickly, with some such brusque words as—

"In the back if you want to smoke, lady."

His tone was not definitely angry or menacing—but neither was it cheerful or considerate; and his voice was loud enough for every passenger in the car to hear. His admonition could have been given in tones inaudible to anyone but the passenger concerned.

Inconsiderate of Passengers

The train had not been long out of the terminal when a slovenly dressed trainman came in and made himself comfortable in one of the chairs; and he and the porter gave expression to their strong opinions on major league baseball for the

best part of an hour, in voices loud enough to be heard throughout the car. Later on, a second trainman joined the discussion which—when the porter left the group—turned to who was bidding for this or that run, and who was likely to get it.

Railroad passenger service, on the average, is splendidly organized and supervised from the standpoint of safety and on-time performance. But the "frosting on the cake" that considerate treatment from really interested employees would provide is, too often, lacking.

It is just as much to the advantage of employees and their unions—as of management or railway owners—that passengers get a favorable impression of the railroad business every time they ride a train.

The air lines have a lot more trouble with safety and maintaining schedules than the railroads do—but they seem to get away with it. Possibly it is because they are almost exclusively in the passenger business, so that each and every employee knows that his job depends on making a good impression on the customers.

*There's Improved Railroading with
National Specialties*

REASON:

National's new Technical Center, the most modern test facility of its kind in the world, tests National draw gear assemblies under duplicated—not "laboratory simulated"—operating conditions.



NATIONAL'S IQ SLIDE GRAPH shows total work done in foot-pounds during impacts between various cars at various speeds! Shows how much of this work National Draft Gears account for at various force levels! Points up need for high capacity in draft gears! Available on request.

AA-4024

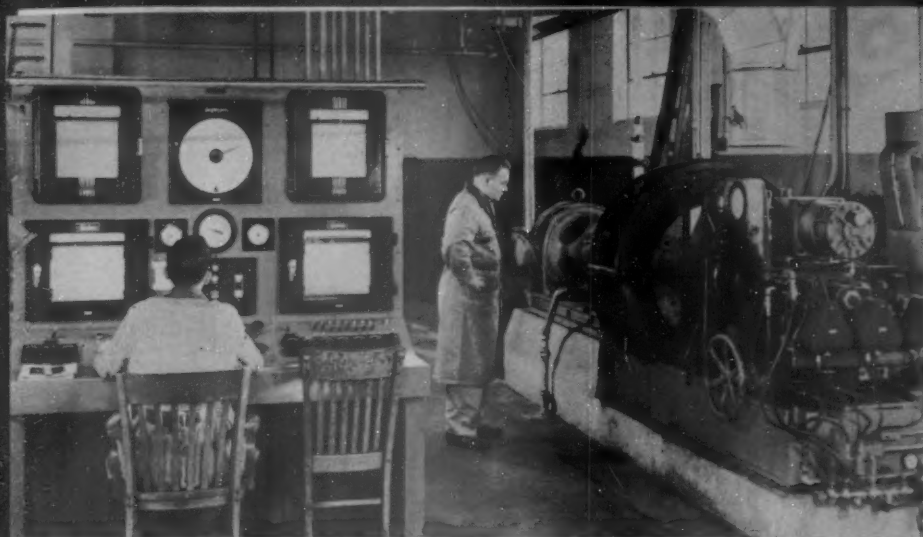
NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Established 1868

Cleveland 6, Ohio

COUPLERS • YOKES • DRAFT GEARS • FREIGHT TRUCKS • SNUBBER PACKAGES • JOURNAL BOXES





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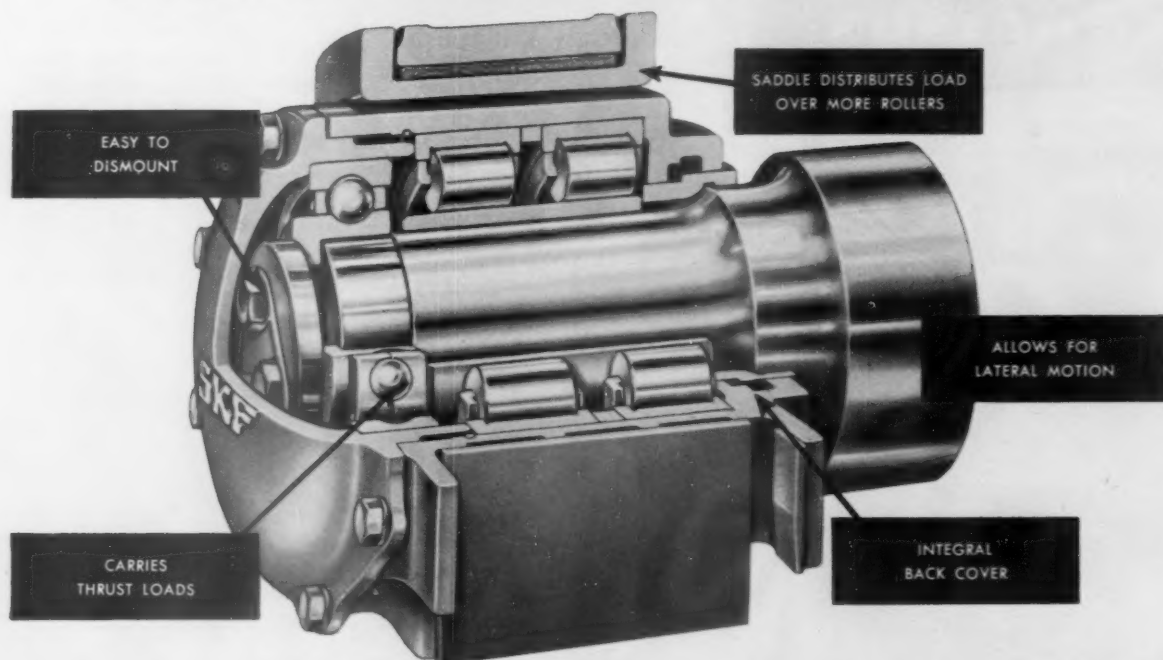
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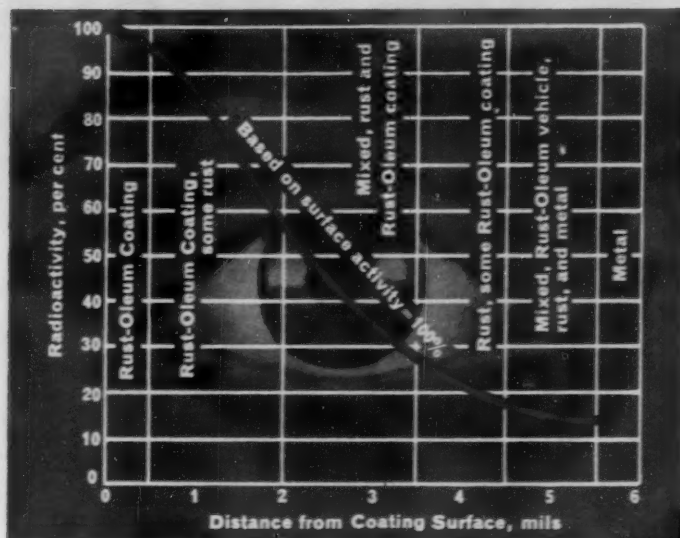
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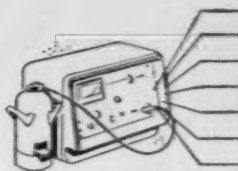
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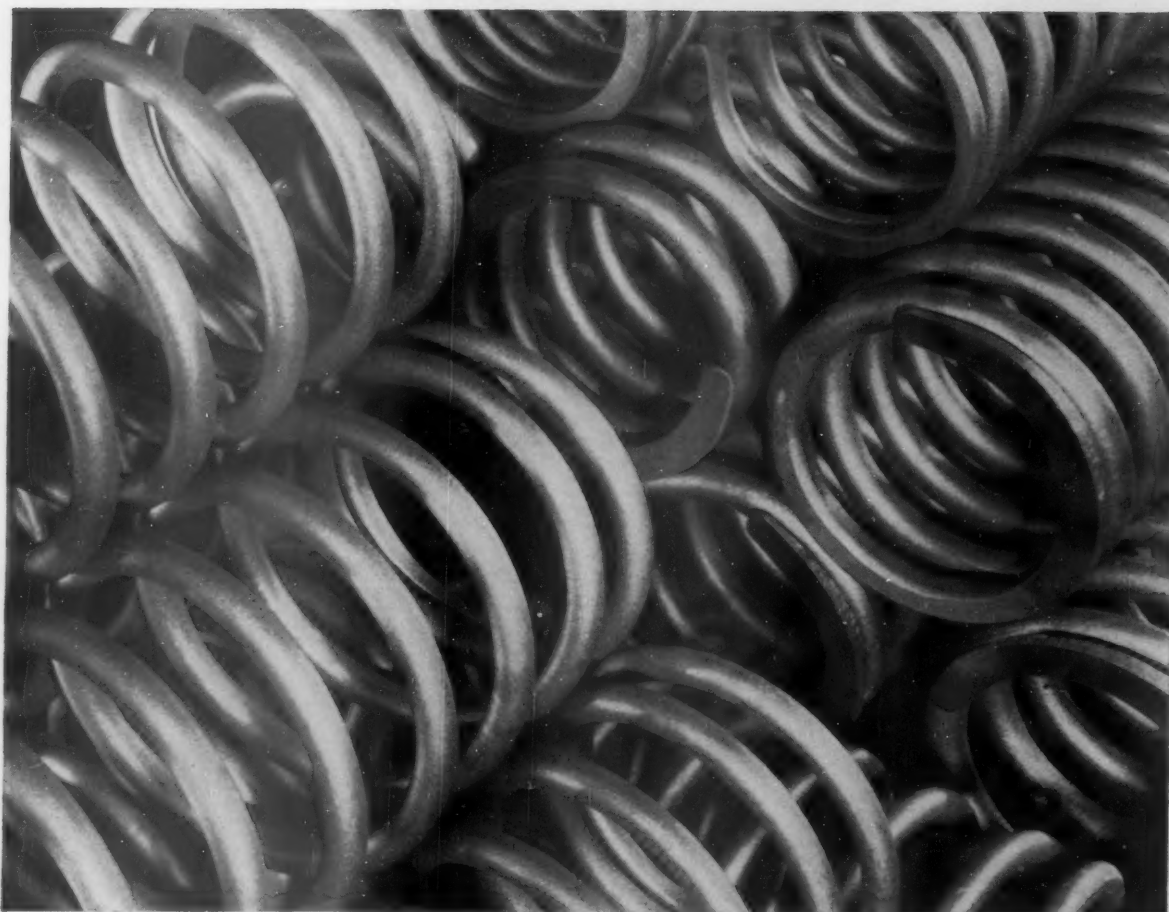
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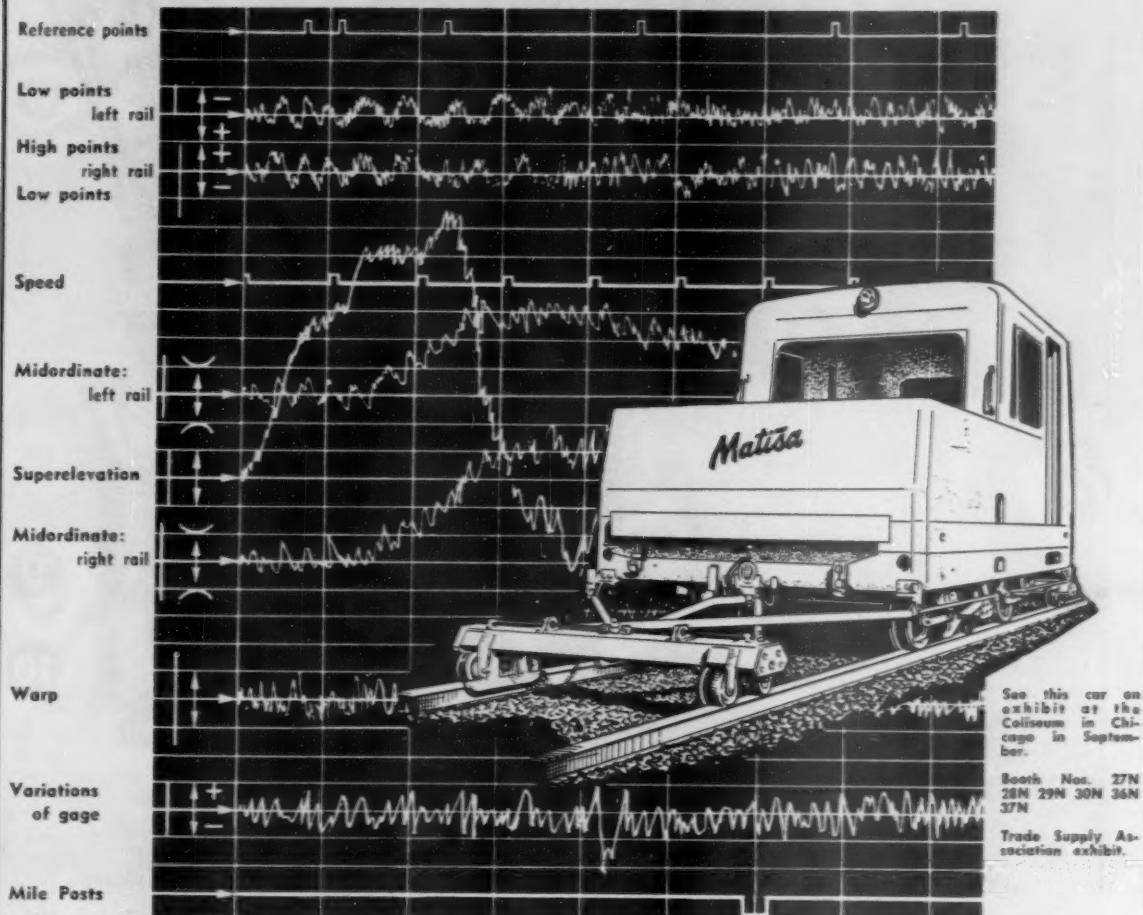
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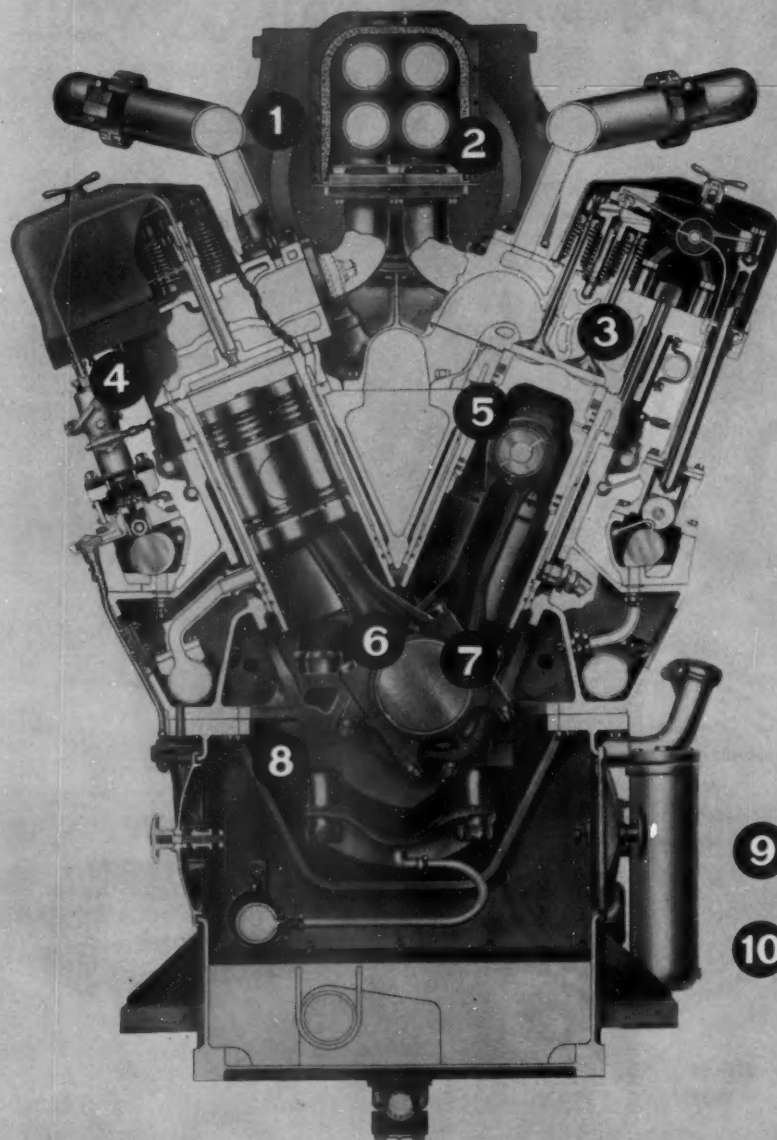
- (1) to record quickly and precisely the condition of track prior to starting programmed work;
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- ② **Ni-Resist exhaust manifold** — reduces casting growth and failures.
- ③ **Cylinder heads** — strengthened with additional metal to distribute stress more uniformly, makes possible use of valve-seat inserts.
- ④ **High-pressure fuel injection with snubber valve** — more complete fuel combustion, lube-oil condition improved, line erosion reduced.
- ⑤ **Ni-Resist insert pistons** — top ring-groove wear reduced, increases ring mileage.
- ⑥ **Grooveless and partially grooved engine bearings** — oil-film thickness and load-carrying capacity increased.
- ⑦ ***Hardened, chrome-plated crankshaft.**
- ⑧ ***Serrated cylinder block** — eliminates fretting at joint surface of saddle and cap, prevents distortion and misalignment.
- ⑨ **Oil-bath filter** — maintains high efficiency over 94 per cent, reduced filter maintenance, reduces engine wear.
- ⑩ **Simplified amplidyne control system** — fewer parts in system with simpler circuits, maintenance reduced.

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can be modernized in
railroad's shops or at ALCO's plant**

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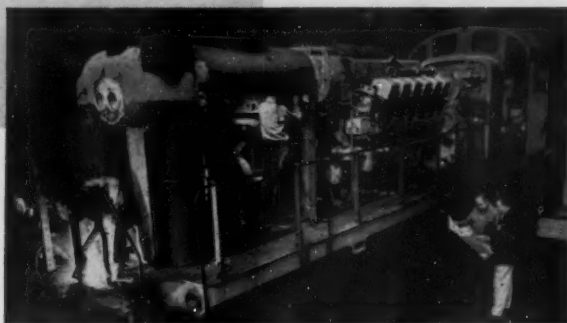
Complete information is available at ALCO's sales offices. Or, if you wish, write P. O. Box 1065, Schenectady 1, New York.



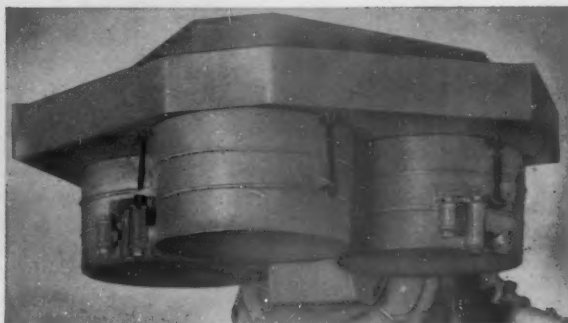
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NEW YORK

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Long-service locomotives are rebuilt in ALCO plant. Railroads choose complete Factory Rebuild Service for upgrading locomotives. Work includes all engine rebuild and modernization, as well as chassis rebuild and improvements. ALCO returns locomotives up to present specifications for service.



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For railway diesel starting



Actual photo taken during vibration torture test on an Ironclad Battery



Section of Ironclad positive plate

Vibration can't loosen active material — can't shorten battery life



When a heavy duty storage battery gets the "shake treatment," battery life is literally at the mercy of the bond between the positive grid and the active material. Heavy shedding means short life.

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This superior performance is only one of the many extra advantages in Exide-Ironclad Batteries — advantages that have earned them an unmatched reputation for long life and high capacity. When you order heavy duty batteries, or the equipment that requires them, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

Now, trains shower-up in minutes, too!

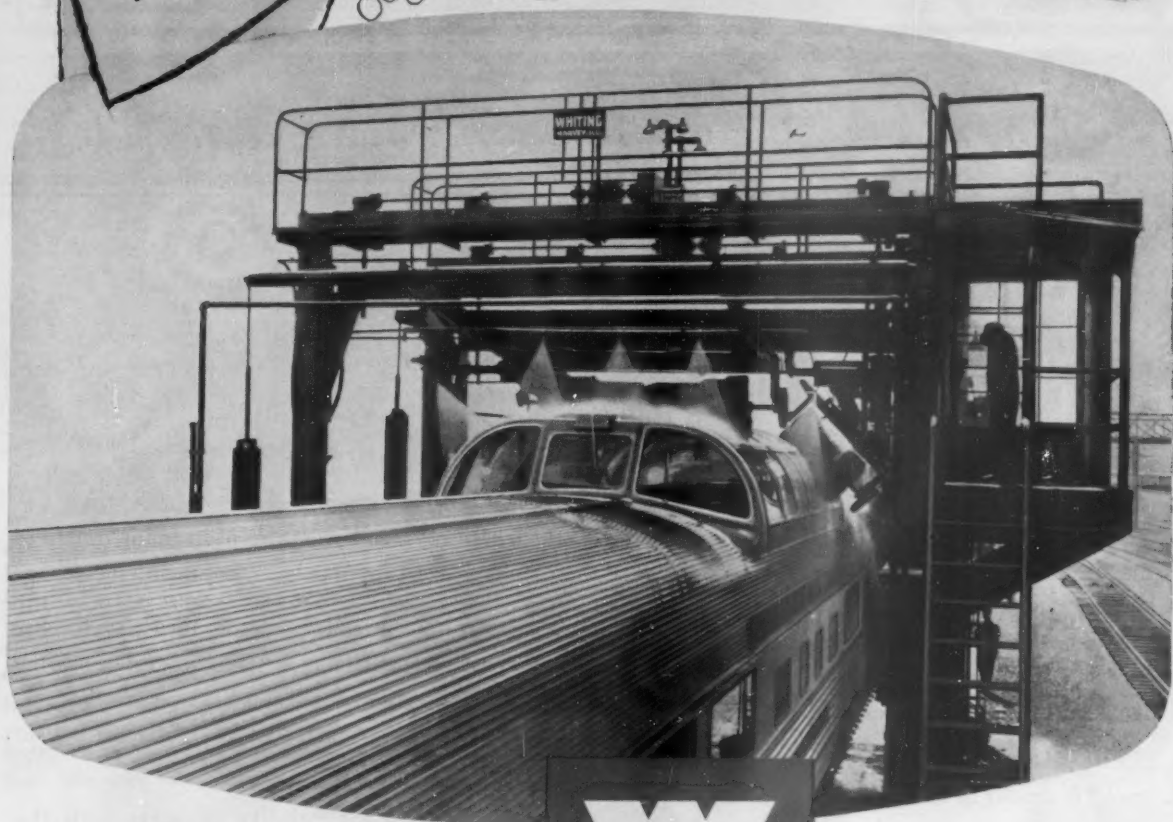


Yes, in just about the same time as you can take a shower, an entire train can be washed clean and bright. At the terminal or on the run one operator and a Whiting Train Washer do the job in minutes. Cars may pass through this washer at the rate of 70 feet per minute... an ordinarily hard-to-clean dome type car in as little as 75 seconds.

Solution spraying, brushing, final washing and rinsing, the complete cleaning operation, is easily controlled by the operator from his station. Dirt and grime are removed without injury to car finish by soft, long-life brushes. Brush holders, held automatically against the car sides, have an exclusive self-aligning mechanism to compensate for car tilt. Sectional brush design makes possible various arrangements to handle special shapes, such as indented windows.

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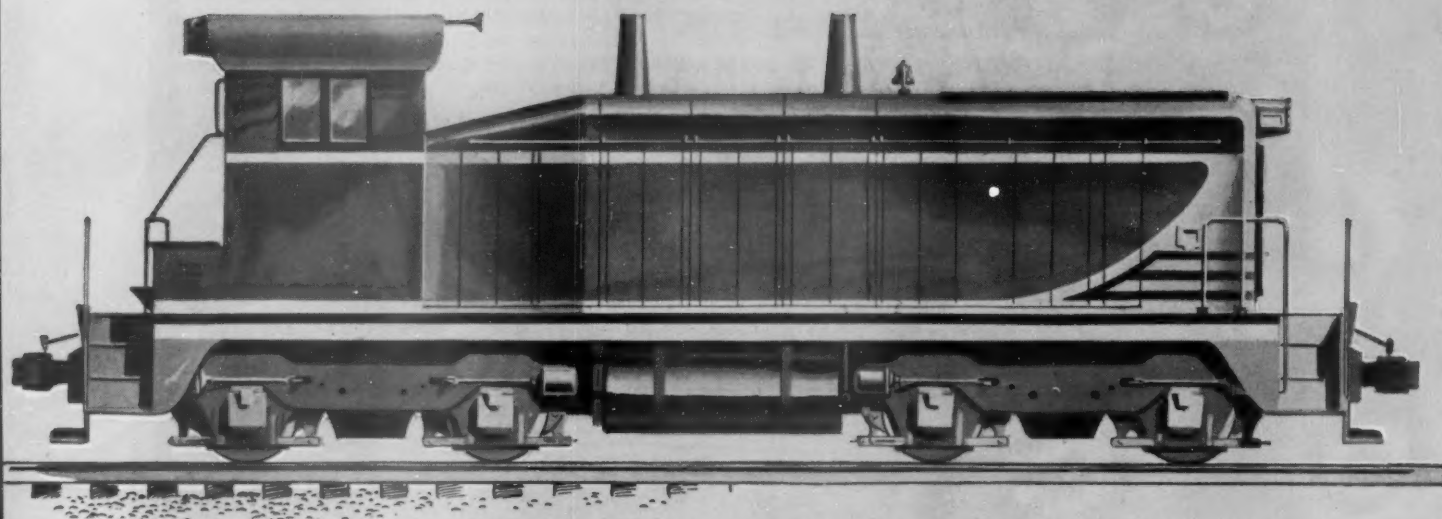
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***Electro-
Motive's***

NEW FLEXIBLE

equips Switching



Twelve General Motors SW1200 switching locomotives with new flexible trucks have been delivered to the Illinois Terminal Railroad, and are now in service on the line's recently de-electrified route between St. Louis and Peoria. Twenty units are being delivered to the New York, New Haven & Hartford.

Electro-Motive's new flexible cast steel switcher truck* is similar to the one used on General Motors road locomotives. It employs the patented "Flexicoil Bolster Suspension" in which the truck bolster is resiliently supported from the truck frame by two sets of coil springs which provide both lateral and vertical travel.

This optional truck gives switching locomotives riding qualities comparable to F and GP units—makes

them easier on track—capable of handling freight at reasonably good speed in branch or main-line service.

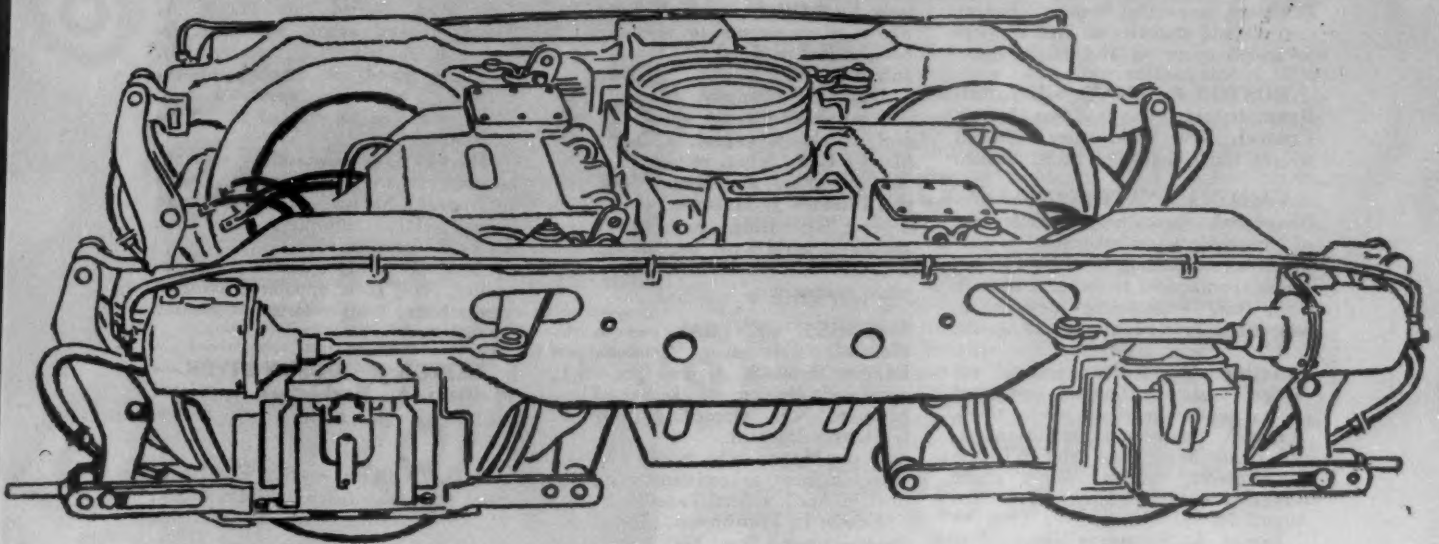
The frame is designed to use either the basic switcher plain bearing journal box or the power roller bearing journal box used on F, GP and SD type locomotives. The clasp brake arrangement is similar to that on our current F-GP truck.

Featuring interchangeability of parts with the 4-wheel Flexicoil truck, the new flexible cast steel truck is available as a replacement for the basic rigid truck on existing switchers with only minor modification of the locomotives.

For full details, write us or ask your nearest Electro-Motive representative.

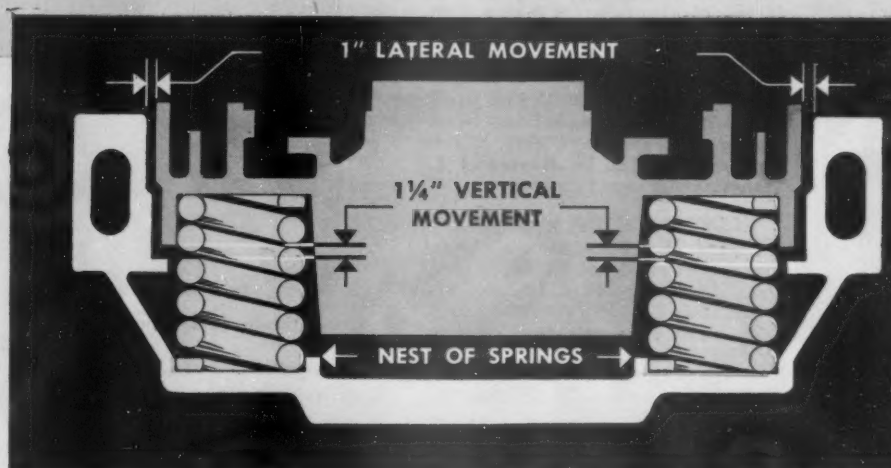
CAST STEEL TRUCK*

Locomotives for road duty



Electro-Motive's new flexible switcher truck employs coil spring suspension of the truck frame from the axle with the springs located directly over the journal box. This design eliminates the elliptic springs, coil springs and equalizer bars used in the truck frame suspension on the basic rigid trucks.

New flexible cast steel switcher truck features "Flexible Bolster Suspension" with large coil springs cushioning shock both laterally and vertically. This results in riding qualities comparable to F, GP and SD locomotives—makes switchers usable for main-line freight hauling at their maximum speed capacity. The new truck is applicable to existing switcher locomotives with only minor modifications.



*Optional at extra cost



ELECTRO-MOTIVE DIVISION GENERAL MOTORS

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Railway Officers

ALASKA.—J. H. Lloyd, assistant general manager of the Rock Island's second district at El Reno, Okla., appointed general manager of the Alaska at Anchorage, to replace R. N. Whitman, who has returned to the Great Northern.

BALTIMORE & OHIO.—Thomas M. Jones, assistant to vice-president, operations and maintenance, Baltimore, retired August 1.

Harry M. Davenport, assistant regional accountant, Eastern region, Baltimore, appointed manager budget controls and statistics on staff of vice-president, operation and maintenance.

BOSTON & MAINE.—R. J. Sullivan, freight traffic manager, Jersey Central, New York, named general freight traffic manager, B&M, Boston.

CANADIAN NATIONAL.—I. W. Shepherd appointed superintendent of mechanical maintenance, system, Montreal, succeeding Earl H. Fisher, whose appointment as manager of work equipment, engineering department, was noted in Railway Age, Aug. 20, p. 13.

Arthur W. Walter, general car service inspector, Montreal, appointed general supervisor of car service there.

Frank Thomas, general manager, real estate department, and William A. Watson, foreign freight traffic manager, both at Montreal, retired August 31.

James A. Saunders promoted to general agent, CN Express.

DENVER & RIO GRANDE WESTERN.—Carroll E. McEnany, assistant superintendent, Grand Junction, Colo., appointed superintendent, Grand Junction division there, succeeding L. B. Coleman, resigned. Mr. McEnany's successor is Samuel A. Dougherty, assistant to the chief engineer, Denver, who in turn is replaced by Victor I. Griffith, assistant superintendent-terminal, Pueblo, Colo. Robert F. Spurling, terminal supervisor, Pueblo, succeeds Mr. Griffith, and in turn is succeeded by Raymond L. Fisher, yardmaster, Pueblo.

ELGIN, JOLIET & EASTERN.—Vernard M. Christensen appointed superintendent, Gary division at Gary, Ind., succeeding M. R. Joyce, who retired July 31.

E. Gard Slocum named chief industrial engineer, Chicago.

ERIE.—Edward T. Butler, industrial commissioner, New York, appointed assistant freight traffic manager there, succeeding L. J. Burgott, deceased. Leo J. Slack, industrial commissioner, Cleveland, Ohio, transferred to New York. George W. Moorhouse appointed industrial commissioner at Cleveland and John S.

Parsons, Jr., named industrial agent there.

Robert H. Lewis appointed superintendent—special duties, assigned to the staff of S. F. McGranahan, assistant vice-president, Cleveland.

FRISCO.—Thomas M. Galloway appointed supervisor freight loss and damage prevention, and Roy V. Holden named car service supervisor, both at Tulsa.

ILLINOIS CENTRAL.—F. A. Fitzpatrick, manager of personnel, resigned August 1. J. F. Jackson and W. J. Cassin appointed assistant managers of personnel, succeeding, respectively, Earl Oliver and R. E. Lorentz, whose advancements to managers of personnel were noted in Railway Age, July 30, p. 31.

Hugo V. Gamper, assistant general purchasing agent, appointed general purchasing agent, Chicago, replacing L. L. King, retired (Railway Age, July 30, p. 31). Harry C. Miller and Charles J. Moisan, assistants to general purchasing agent, named assistant general purchasing agents. Robert W. Forsell, buyer, appointed office manager.

JERSEY CENTRAL.—A. C. Manuel, storekeeper, Cummuniapaw Engine Terminal, Jersey City, N.J., appointed division storekeeper, Elizabethport, N.J., succeeding John F. Gilligan, deceased.

S. L. Mapes, who moved up from chief engineer to assistant vice-president in April, retired June 30.

Edwin L. Tomlinson, general passenger agent, New York, appointed passenger traffic manager there, succeeding Harry E. Yerkes, who re-



Edwin L. Tomlinson

tired September 1. Thomas F. Clarkin, assistant general passenger agent, named assistant passenger traffic manager, newly titled position.

Victor L. Pernter, eastern freight traffic manager of the Reading at Philadelphia since March, named freight traffic manager in charge of sales and service, Jersey Central Lines, New York, succeeding Richard J.

Sullivan, who recently became general freight traffic manager, Boston & Maine, Boston. A photograph of Mr. Pernter was published in Railway Age, Mar. 12, p. 77.

KANSAS CITY SOUTHERN.—Ernest O'Neil appointed tax commissioner, Shreveport, La., succeeding E. P. Twyman, who retired September 1. C. L. Baldwin named tax agent, Kansas City, Mo.

J. Webb appointed trainmaster, Heavener, Okla., to succeed M. A. Eddy, who retired September 1.

LACKAWANNA.—William A. Carbone, general passenger agent at New York, retired July 31. N. A. Mitts, general agent, passenger department, Buffalo, N.Y., succeeds Mr. Carbone. Fred W. Scheppmann, traveling passenger agent, Elmira, N.Y., promoted to succeed Mr. Mitts at Buffalo.

Harold J. Gilmartin, assistant general attorney, appointed general attorney. Charles A. Kerlavage named claims attorney, succeeding F. E. Walter, retired.

J. H. O'Neill, assistant to comptroller, New York, appointed assistant comptroller; his former position abolished.

LEHIGH & HUDSON RIVER.—William A. Mackintosh appointed district freight agent, New Haven, Conn.

MILWAUKEE.—R. E. Beck, chief train dispatcher at Butte, Mont., appointed trainmaster, Idaho division at Othello, Wash.

Bernard J. McCanna, trainmaster Twin City Terminals at Minneapolis, transferred to Hastings & Dakota division at Aberdeen, S. D., to replace Jack R. Werner, named assistant superintendent, Trans-Missouri division at Miles City, Mont. D. O. Burke, trainmaster at Miles City, succeeds Mr. McCanna at Minneapolis.

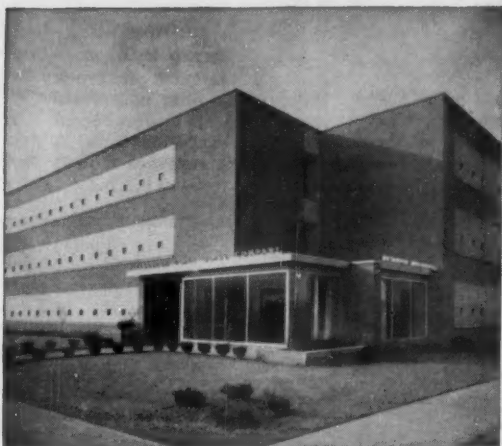
D. M. Wiseman, district passenger agent, Salt Lake City, appointed district freight and passenger agent there.

MINNEAPOLIS & ST. LOUIS.—Enoch Anderson, general auditor and assistant treasurer, Minneapolis, elected treasurer there, succeeding Clarence E. Bailey, retired. Virgil M. Dissmeyer, special assistant to vice-president and comptroller, appointed assistant comptroller in revenue accounting. Clarence H. Heinecke named auditor of car and station accounts, succeeding Robert E. Turnquist, auditor of freight traffic.

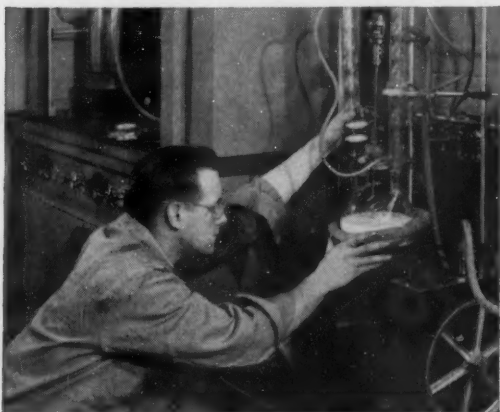
Walter W. Lovett named superintendent of shops at Cedar Lake, Minn. Mr. Lovett was formerly round-house foreman for the Illinois Central at its Chicago Markham yards.

MISSOURI-KANSAS-TEXAS.—J. M. O'Brien appointed assistant superintendent, Northern division at (Continued on page 52)

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● Pittsburgh Plate Glass Company's new Paint Research Center at Springdale, Pa., contains the most modern laboratories devoted exclusively to the creation and experimental production of new finishes.



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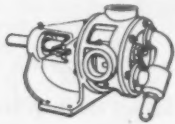
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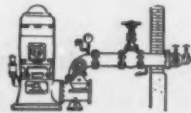
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Fire Pumps

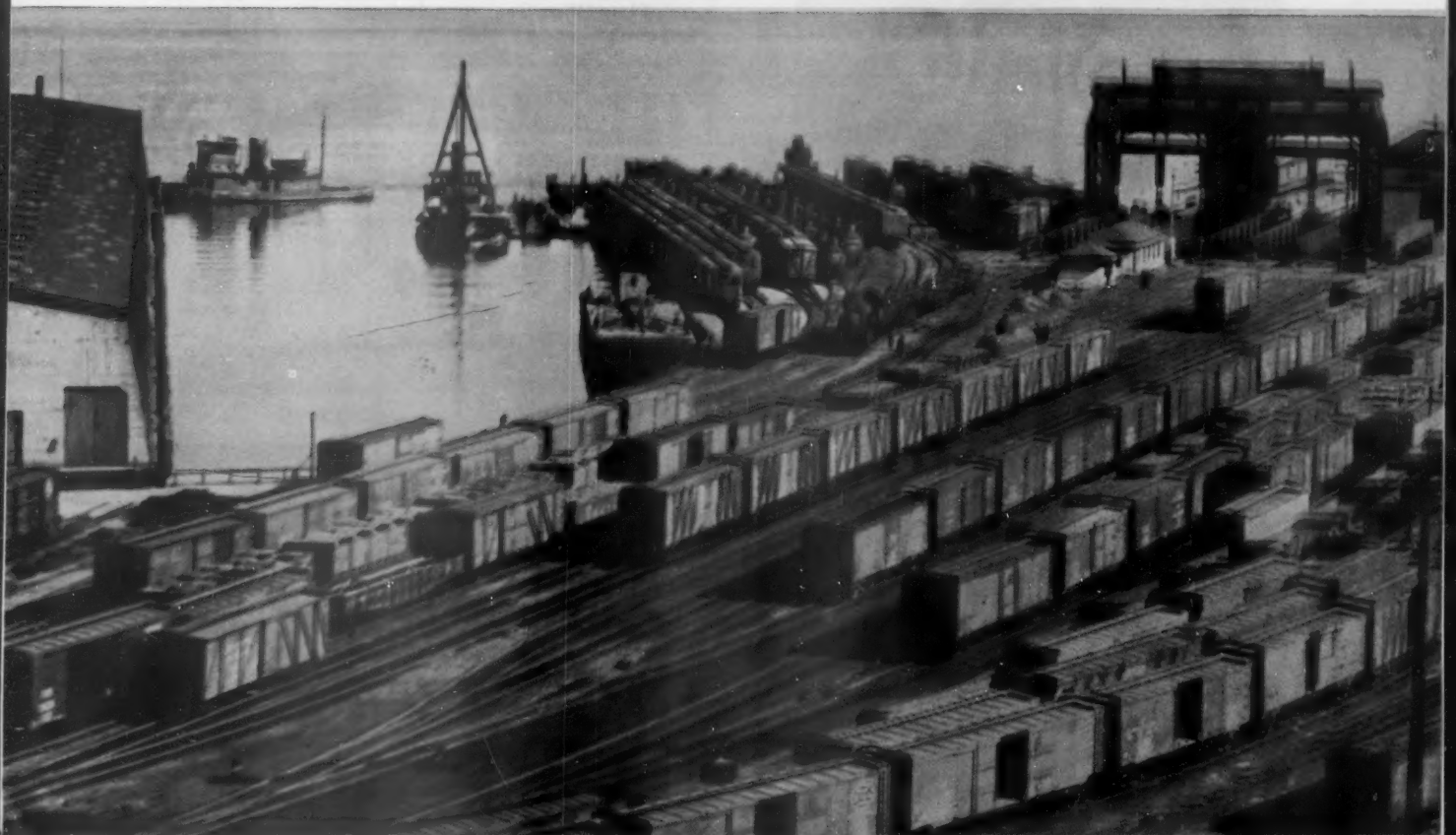
... Underwriters' Laboratories Approved vertical and horizontal types for above- or below-ground installations in capacities up to 2500 g.p.m.



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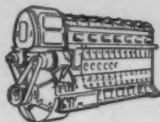
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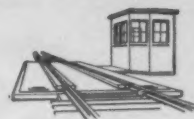
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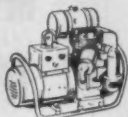
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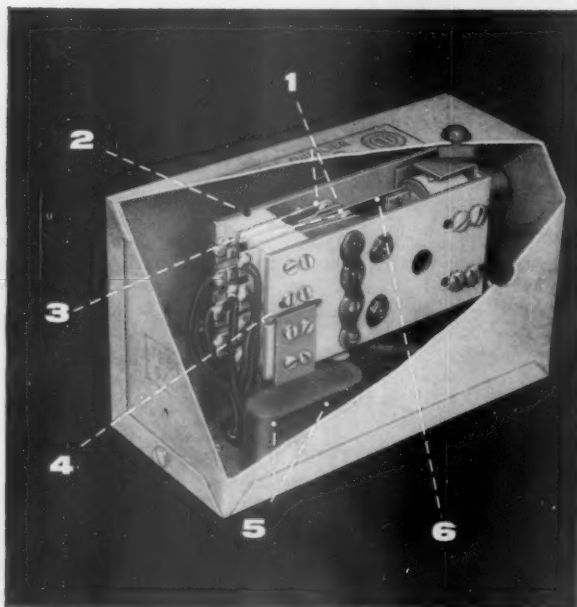
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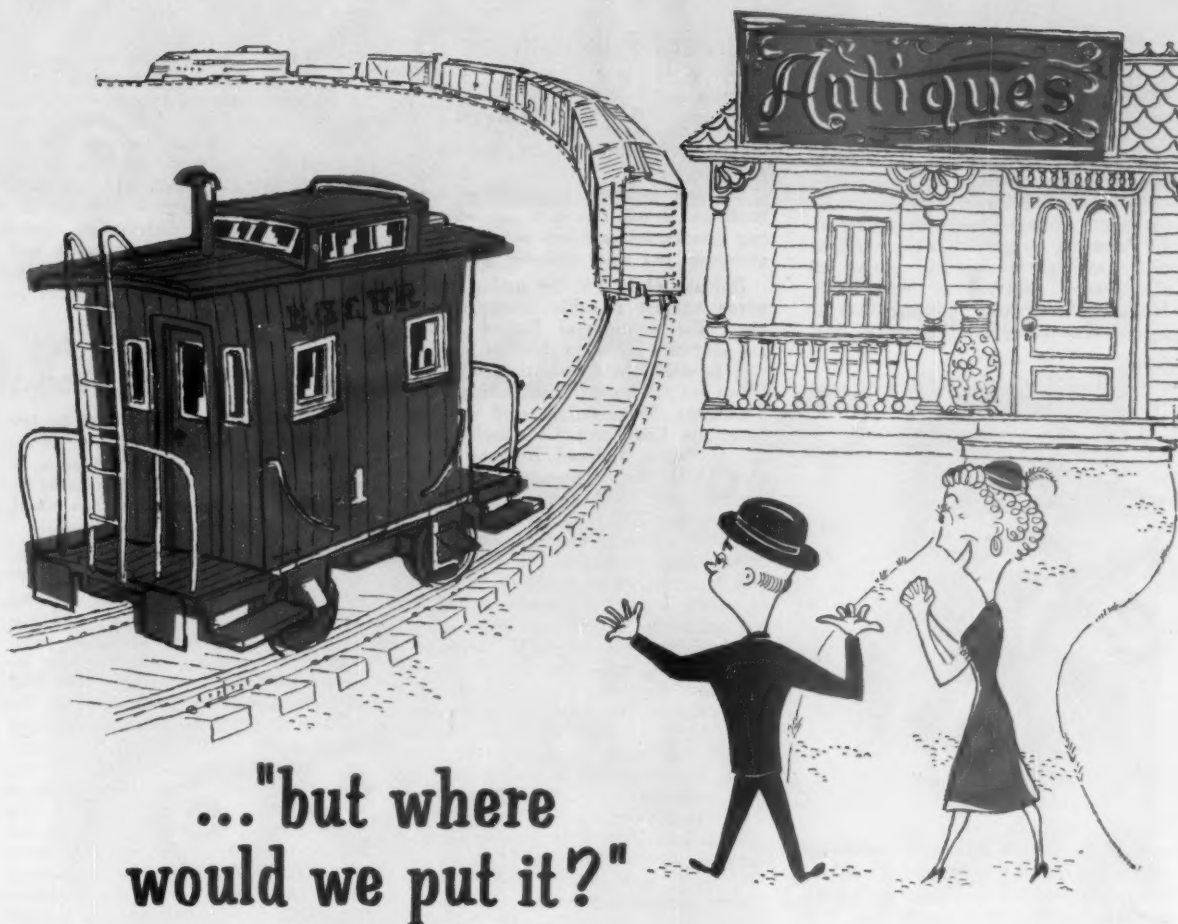
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(Continued from page 46)

Franklin, Mo., succeeding **Downing Miller**, transferred to North Texas division at Denison, Tex.

READING.—**Edward L. Dash**, Western freight traffic manager, Chicago, appointed Eastern freight traffic manager, Philadelphia, succeeding **V. L. Pernter**, resigned to become freight traffic manager—sales and service of the **Jersey Central** at New York. **Harold E. Pauli**, division freight agent, Harrisburg, Pa., succeeds Mr.



Harold E. Pauli

Dash as Western freight traffic manager, Chicago. **William E. Fassitt** appointed division freight agent, Allentown, Pa., succeeding **George M. Sassaman**, transferred to Harrisburg, Pa., replacing Mr. Pauli. A photograph of Mr. Dash was published in *Railway Age*, Mar. 12, p. 77.

SANTA FE.—**H. E. Wilson** appointed chief engineer at Topeka, Kan., succeeding **F. D. Kinnie**, retired.

Robert W. Hauptli, assistant division freight agent, Los Angeles, appointed division freight agent there, succeeding **L. G. Sills**, retired.

TORONTO, HAMILTON & BUFFALO.—**I. N. Wagle**, assistant division engineer, **New York Central**, Columbus, Ohio, appointed engineer maintenance of way of the TH&B at Hamilton, Ont.

OBITUARY

Albert S. Long, Jr., 34, general attorney and secretary of the **Monon**, died August 31 at Chicago.

Charles R. Dougherty, 61, assistant manager of the freight claims department of the **Milwaukee**, died August 30 at La Grange, Ill.

George P. Williams, who retired last October as assistant to president of the **Kansas City Southern** at Beaumont, Tex., died August 29 at Jacksonville, Fla.

Current Publications

PAMPHLETS

RAILROAD PLANNING FOR DEFENSE... A GUIDE. 24 pages, illustrations. Association of American Railroads, Transportation Bldg., Washington 6, D.C. Free to all railroads, military agencies, state and local civil defense organizations and other interested groups.

Defense plans for the nation's railroads against possible enemy attack upon the continental United States are outlined in this booklet, which was prepared in cooperation with the Office of Defense Mobilization, the Transport Mobilization staff of the Interstate Commerce Commission and the National Railroad Defense Planning Committee, composed of the industry's top operating officers. It stresses particular factors and problems of railroad maintenance, operations and protection of equipment and facilities which might be expected to result in event of enemy action in this country. After an introduction emphasizing the railroads' responsibility for defense planning, both on the part of management and the individual, the text material is divided into three sections. Part one covers advance planning to minimize damage from enemy attack, including protective measures, emergency organization and training such as first aid and hospitalization. Part two deals with defense against espionage and sabotage, and part three details plans for recovery after attack.

QUIZ ON RAILROADS AND RAILROADING. Association of American Railroads, Transportation Bldg., Washington 6, D.C. Free.

Now in its 11th edition, Quiz supplies the answers to over 300 questions about American railroads—their history, physical characteristics, operations, traffic, and the important role they play in American life as transportation servants, employers of labor, purchasers of materials, supplies and equipment, fields of investment, and taxpayers.

ESSAYS ON "TRADITIONAL DIFFERENTIALS" IN RAILWAY RATE-MAKING. 36 pages. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. \$1.

This pamphlet contains the two prize-winning essays in the Railway Age essay contest on the subject "Traditional Differentials in Railway Rates—Should They and Can They Be Maintained Under Rivalry from Contract and Private Transportation?" It includes eight additional essays selected by the judges as especially worthy of attention and study.

LOOK WHERE A SITE IS PRODUCTION-RIGHT. 24 pages, illustrations, maps. Baltimore & Ohio Railroad Company, Public Relations Department, Baltimore 1. Free.

In opening the second postwar decade of industrial development in the "Heart of Industrial America," the B&O is distributing this brochure on the advantages offered by a plant location in the 13-state area served by the carrier. The new booklet contains maps showing location of coal, salt, limestone, silica sand and other deposits, population distribution, manufacturing plants and employees, and technical studies, as well as the principal markets and industrial areas in the northeast United States.

BOOKS

BULLETIN NO. 94. LOCOMOTIVES OF THE SOUTHERN PACIFIC COMPANY, by Gerald M. Best and David L. Joslyn. 172 pages, illustrations. *Railway & Locomotive Historical Society*, Baker Library, Harvard Business School, Boston. \$2 to members; \$3 to non-members.

The present edition is a revision and enlargement of a limited edition published in 1941. Mr. Best prefaces his extensive roster with a brief history of the Southern Pacific, its predecessor companies, and its steam locomotives. Over the period from 1853 to 1955, the steam locomotives of the SP and its predecessor lines comprised about 4,200 units, and of this total less than 15% are still in service, due to the rapid conversion from steam to diesel-electric during the past ten years. The scrapped 85% is the group which most interests railroad historians. This research presents a picture of the motive power of the predecessor roads, their relation to the present system of numbering, and facts about their disposal. The concluding article on SP locomotive history was written by Mr. Joslyn.

THE GREAT LOCOMOTIVE CHASE, by MacLennan Roberts. 160 pages. Dell Publishing Company, 261 Fifth Avenue, New York 16. 25 cents.

Based on the Walt Disney production and authentic Civil War documents, this story tells of a handful of Union soldiers who attempted to steal a locomotive, the "General," and three empty box cars, to sabotage the Western & Atlantic Railroad—a vital Confederate artery of supply. This historic episode ended in failure when the conductor of the stolen train, after a chase of nearly five hours and 90 miles, using a handcar and three locomotives, drove the raiders into the wilds of the Cumberland foothills.

A PICTURE HISTORY OF RAILWAYS, by C. Hamilton Ellis. 408 plates. The Macmillan Company, 60 Fifth ave., New York 11. \$5.95.

The author presents in this volume a record of the birth and development of the locomotive and railway systems all over the world. Well known as a railway historian, he covers the subject pictorially and demonstrates how railways changed both the face and the nature of the man-made world.

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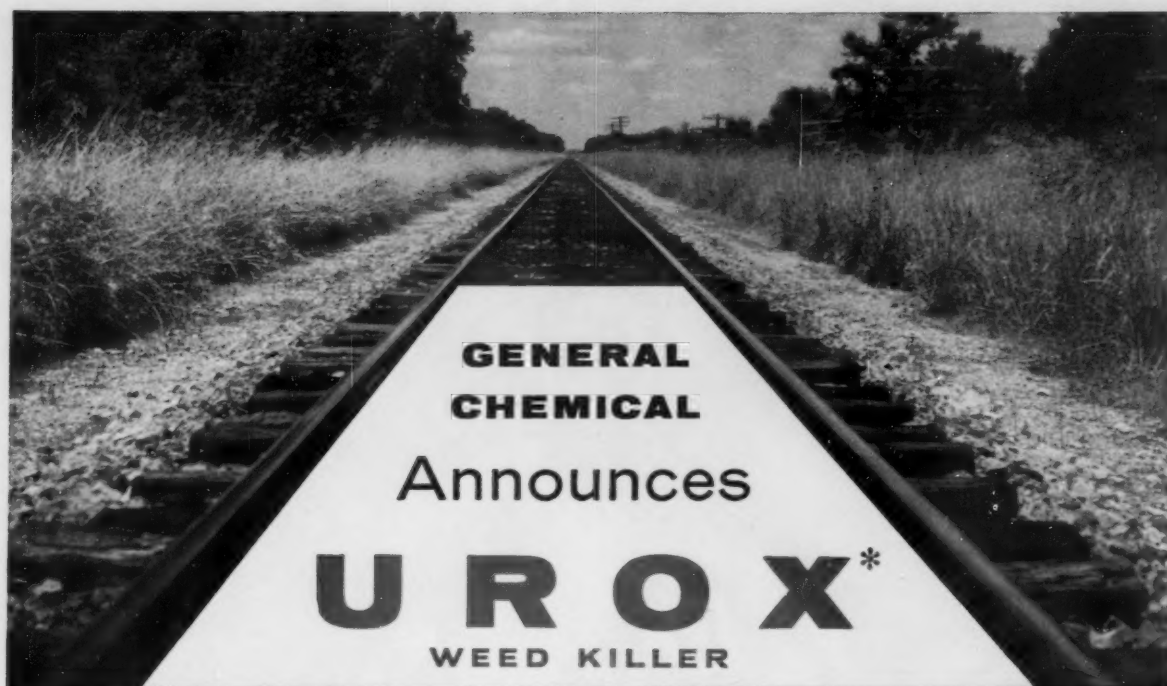
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